

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.08.95
Test oil : ISO 4113

Combination No. : 0 402 746 909

Injection pump
Pump designation : PES6P120A320RS7236
EP type number : 0 412 726 848

Governor
Governor design. : RQV275...1000PA1001
: -1
Governor no. : 0 421 813 936

Cust. part No. : CCEP 5116A PROJ.171

Customer-spec. information

Customer : RVI
Motor : MIDR 063540 J/3
Power KW : 306.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.55
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 13.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 1

CRT ZERO POSITION

Rack travel in mm : 13.80
Tolerance mm : + 0.05

BASIC SETTING

Rated speed rpm : 600

Det. quantity
cm³/1000 strokes : 310.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : -8.60
Tolerance mm : + - 0.10

Det. quantity
cm³/1000 strokes : 31.0

Tolerance
cm³/1000 strokes : + - 2.0

Check tolerance
cm³/1000S. : + - 5.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1150

Rack travel in mm : 16.50
Tolerance mm : + - 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600

Aneroid pressure
hPa : 1000

Det. quantity
cm³/1000 strokes : 310.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 302.0

tolerance degree : + - 4.0

RATED SPEED

rack travel mm : -1.00

Rated speed rpm : 1070

Tolerance 1/min : + - 5

rack travel mm : -9.70

Rated speed rpm : 1210

Tolerance 1/min : + - 15

rack travel mm : -13.25

Tolerance mm : + - 0.55

Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 246.0

tolerance degree : + - 4.0

Testing:

Rated speed rpm : 300

rack travel mm : -8.60

Tolerance mm : + - 0.10

Rated speed rpm : 200

CRT mm max. : < -7.20

Rated speed rpm : 370

TORQUE CONTROL

Rated speed rpm : 600

Rated speed rpm : 1000

Tolerance mm : + - 0.10

Rated speed rpm : 500
rack travel mm : -5.50
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : -5.00
Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 240
rack travel mm : -3.80
Tolerance mm : + - 0.20

Pressure hPa : 600
rack travel mm : -0.95
Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 225

Check speed 1/min : > 80
Check speed 1/min : < 245

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1000
Rated speed rpm : 1000
Del. quantity cm3/1000 strokes : 287.0
Tolerance cm3/1000 strokes : + - 3.0
Check tolerance cm3/1000S. : + - 6.0

Aneroid pressure hPa : -
Rated speed rpm : 500

rack travel mm : -5.50
Tolerance mm : + - 0.10
Del. quantity cm3/1000 strokes : 138.0
Tolerance cm3/1000 strokes : + - 5.0
Check tolerance cm3/1000S. : + - 8.0
Spread
Tolerance cm3/1000 strokes : 8.0
Check tolerance cm3/1000S. : 12.0

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm3/1000 strokes : 152.0
Tolerance cm3/1000 strokes : + - 1.0
Check tolerance cm3/1000S. : + - 4.0

STARTING FUEL DELIVERY

Del. quantity cm3/1000 strokes : 160.0
Tolerance cm3/1000 strokes : + - 10.0
Check tolerance cm3/1000S. : + - 14.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : -8.60
Tolerance mm : + - 0.10
Del. quantity cm3/1000 strokes : 31.0
Tolerance cm3/1000 strokes : + - 2.0
Check tolerance cm3/1000S. : + - 5.0
Spread
Tolerance cm3/1000 strokes : 8.0
Check tolerance cm3/1000S. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.08.95
Test oil : ISO 4113

Combination No. : 0 402 746 931

Injection pump
Pump designation : PES6P120A320RS7236
EP type number : 0 412 726 848

Governor
Governor design. : RQV275...1000PA1001
: -2
Governor no. : 0 421 813 989

Cust. part No. : CCEP5128A 66-194

Customer-spec. information

Customer : RVI
Motor : MIDR 063540 N/3
Power KW : 283.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + - 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5
Tolerance bar : + - 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + - 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + - 1.0

Prestroke mm : 4.55
Tolerance mm : + - 0.05
Check
tolerance mm : + - 0.10

Rack travel in mm : 19.50
Tolerance mm : + - 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + - 0.50
Check
tolerance °NW : + - 0.75

Start of delivery mark

Barrel no. : 1

CRT ZERO POSITION

Rack travel in mm : 13.35
Tolerance mm : + - 0.05

BASIC SETTING

Rated speed rpm : 600

Det. quantity
cm³/1000 strokes : 290.0

Tolerance
cm³/1000 strokes : + - 2.0

Check tolerance
cm³/1000S. : + - 5.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 300

Rack travel in mm : -8.20
Tolerance mm : + - 0.10

Det. quantity
cm³/1000 strokes : 31.0

Tolerance
cm³/1000 strokes : + - 2.5

Check tolerance
cm³/1000S. : + - 5.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1190

Rack travel in mm : 13.20
Tolerance mm : + - 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1000

Det. quantity
cm³/1000 strokes : 290.0

Tolerance
cm³/1000 strokes : + - 2.0

Check tolerance
cm³/1000S. : + - 5.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 301.0
tolerance degree : + - 4.0

RATED SPEED

rack travel mm : -1.00
Rated speed rpm : 1070
Tolerance 1/min : + - 5

rack travel mm : -9.30
Rated speed rpm : 1205
Tolerance 1/min : + - 15

rack travel mm : -12.85
Tolerance mm : + - 0.55
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 247.0
tolerance degree : + - 4.0

Testing:

Rated speed rpm : 300
rack travel mm : -8.20
Tolerance mm : + - 0.10

Rated speed rpm : 200

CRT mm max. : < -6.80

Rated speed rpm : 365

TORQUE CONTROL

Rated speed rpm : 600
Rated speed rpm : 1000

Tolerance mm : + 0.10
 Rated speed rpm : 600
 rack travel mm : -4.50
 Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
 Pressure hPa : 1000
 Rated speed rpm : 500
 Pressure hPa : -
 rack travel mm : -3.80
 Tolerance mm : + 0.30

MEASUREMENT

Rated speed rpm : 500
 Pressure hPa : 240
 rack travel mm : -2.60
 Tolerance mm : + 0.20
 Pressure hPa : 480
 rack travel mm : -0.75
 Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100
 Rated speed rpm : < 195
 Check speed 1/min : > 80
 Check speed 1/min : < 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1000
 Rated speed rpm : 1000
 Del. quantity cm3/1000 strokes : 270.0
 Tolerance cm3/1000 strokes : + 4.0
 Check tolerance cm3/1000S. : + 7.0

Aneroid pressure hPa : -
 Rated speed rpm : 600
 rack travel mm : -4.50
 Tolerance mm : + 0.10
 Del. quantity cm3/1000 strokes : 159.0
 Tolerance cm3/1000 strokes : + 5.0
 Check tolerance cm3/1000S. : + 8.0
 Spread
 Tolerance cm3/1000 strokes : 8.0
 Check tolerance cm3/1000S. : 12.0

Aneroid pressure hPa : -
 Rated speed rpm : 500
 Del. quantity cm3/1000 strokes : 167.0
 Tolerance cm3/1000 strokes : + 1.0
 Check tolerance cm3/1000S. : + 4.0

STARTING FUEL DELIVERY

Del. quantity cm3/1000 strokes : 160.0
 Tolerance cm3/1000 strokes : + 10.0
 Check tolerance cm3/1000S. : + 14.0

LOW IDLE

Rated speed rpm : 300
 Rack travel in mm : -8.20
 Tolerance mm : + 0.10
 Del. quantity cm3/1000 strokes : 31.0
 Tolerance cm3/1000 strokes : + 2.5
 Check tolerance cm3/1000S. : + 5.0
 Spread
 Tolerance cm3/1000 strokes : 6.0
 Check tolerance cm3/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.08.95
Test oil : ISO 4113

Combination No. : 0 400 866 169

Injection pump
Pump designation : PES6A85D41C/3RS2611
EP type number : 0 410 886 902

Governor
Governor design. : RSV325...1250A2C540
: -3L
Governor no. : 0 420 232 565

Cust. part No. :

Customer-spec. information

Customer : KHD
Motor : F6L913
Power KW : 89.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 2.55
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.55
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 63.0

Tolerance
cm³/1000 strokes : + 0.5

Check tolerance
cm³/1000S. : + 2.5

Spread

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 5.0

Rated speed rpm : 325

Rack travel in mm : 7.00

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 15.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0

Spred

Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 4.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3

Rated speed rpm : 800

Rack travel in mm : 0.50

Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 5.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure

hPa : -

Del. quantity
cm³/1000 strokes : 63.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.5

Spred

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 5.0

CONTROL LEVER

control lever
position degree : 102.0

tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 9.50

Rated speed rpm : 1295

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1365

Tolerance 1/min : ± 15

rack travel mm : 0.85

Tolerance mm : ± 0.55

Rated speed rpm : 1525

LOW IDLE

control lever
position degree : 74.0

tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 325

rack travel mm : 7.00

Tolerance mm : ± 0.10

rack travel mm : 2.00

Rated speed rpm : 440

Tolerance 1/min : ± 30

SET IDLE AUXILIARY SPRING

Rated speed rpm : 100

TORQUE CONTROL

Rated speed rpm : 1250

rack travel mm : 10.55

Tolerance mm : ± 0.05

Rated speed rpm : 500

rack travel mm : 11.15

Tolerance mm : ± 0.05

Rated speed rpm : 1000
rack travel mm : 10.80
Tolerance mm : + - 0.10

End of test specification sheet

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 55.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 3.5
Spread
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 17.80
Tolerance mm : + - 0.20
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : + - 5.0
Check tolerance
cm³/1000S. : + - 8.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 7.00
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 5.0
Spread
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.05.95
Test oil : ISO 4113

Combination No. : 9 400 030 696

Injection pump
Pump designation : PES6A95D320RS2881
EP type number : 9 410 037 215

Governor
Governor design. : RSV475...1250A0C826R
Governor no. : 9 420 034 700

Cust. part No. :

Customer-spec. information
Customer : CUMMINS
Motor : 6BT - 165 PS

TEST BENCH REQUIREMENTS

Inlet line : 1.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 207.0
Tolerance bar : + 3.0

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery blocking

°NW after s.o.d. : 7.00
Tolerance : + 0.10
Check
tolerance °NW : + 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.15
Tolerance mm : + 0.05

Rated speed rpm : 475
 Rack travel in mm : 5.10
 Tolerance mm : + - 0.10
 Del. quantity cm³/1000 strokes : 16.0
 Tolerance cm³/1000 strokes : + - 2.0
 Check tolerance cm³/1000S. : + - 4.5
 Spread
 Tolerance cm³/1000 strokes : 3.5
 Check tolerance cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

governor spring pre-tension
 click setting x : 2.50

CONTROL LEVER

control lever position degree : 54.5
 tolerance degree : + - 4.0

RATED SPEED
 rack travel mm : 11.10
 Rated speed rpm : 1300
 Tolerance 1/min : + - 5

rack travel mm : 4.00
 Rated speed rpm : 1395
 Tolerance 1/min : + - 15

rack travel mm : 1.20
 Tolerance mm : + - 0.50
 Rated speed rpm : 1450

LOW IDLE

control lever position degree : 27.5
 tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 100
 CRT mm min. : > 19.50

Testing:

Rated speed rpm : 475
 rack travel mm : 5.10
 Tolerance mm : + - 0.10
 rack travel mm : 2.00
 Rated speed rpm : 540
 Tolerance 1/min : + - 30

TORQUE CONTROL

Rated speed rpm : 1250
 rack travel mm : 12.15
 Tolerance mm : + - 0.05

Rated speed rpm : 500
 rack travel mm : 12.15
 Tolerance mm : + - 0.10

Rated speed rpm : 800
 rack travel mm : 12.15
 Tolerance mm : + - 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 800
 Pressure hPa : 1000
 rack travel mm : 12.15
 Tolerance mm : + - 0.05

Rated speed rpm : 500
 Pressure hPa : 505
 rack travel mm : 11.10
 Tolerance mm : + - 0.10

MEASUREMENT

Rated speed rpm : 800
 Pressure hPa : -
 rack travel mm : 8.55
 Tolerance mm : + - 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 65.0
Tolerance
cm³/1000 strokes : + - 1.5
Check tolerance
cm³/1000S. : + - 4.0

End of test specification sheet

Aneroid pressure
hPa : 1000
Rated speed rpm : 800
rack travel mm : 12.15
Tolerance mm : + - 0.05
Del. quantity
cm³/1000 strokes : 114.0
Tolerance
cm³/1000 strokes : + - 1.5
Check tolerance
cm³/1000S. : + - 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : + - 0.75
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : + - 7.0
Check tolerance
cm³/1000S. : + - 10.0

LOW IDLE

Rated speed rpm : 475

Rack travel in mm : 5.10
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.5
Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.10.95
Test oil : ISO 4113

Combination No. : 0 403 246 051

Injection pump
Pump designation : PES6MW100/720RS1526
EP type number : 0 413 206 025

Governor
Governor design. : RGV300...1200MW132
: -18
Governor no. : 0 420 083 337

Cust. part No. : 0260748602

Customer-spec. information

Customer : MB-NFZ
Motor : OM366LA
Power KW : 125.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 4.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.00
Tolerance mm : + 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 11.90
Tolerance mm : + 0.05

Del. quantity
cm3/1000 strokes : 98.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000s. : + 3.0

Spread

Tolerance
 cm³/1000 strokes : 4.5
 Check tolerance
 cm³/1000S. : 7.0

Rated speed rpm : 300
 Rack travel in mm : 4.00
 Tolerance mm : ± 0.10
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 4.5
 Spread
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1253
 guide sleeve
 travel mm : 7.33
 Tolerance mm : ± 0.15
 Rated speed rpm : 300
 guide sleeve
 travel mm : 1.01
 Tolerance mm : ± 0.20
 Rated speed rpm : 811
 guide sleeve
 travel mm : 4.16
 Tolerance mm : ± 0.25
 Rated speed rpm : 560
 guide sleeve
 travel mm : 3.08
 Tolerance mm : ± 0.25
 Rated speed rpm : 1750
 guide sleeve
 travel mm : 13.50
 Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : 125
 Rated speed rpm : 1375
 Rack travel in mm : 10.00
 Tolerance mm : ± 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 98.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 3.0
 Spread
 Tolerance
 cm³/1000 strokes : 4.5
 Check tolerance
 cm³/1000S. : 7.0

CONTROL LEVER

control lever
 position degree : 120.0
 RATED SPEED
 rack travel mm : 10.90
 Rated speed rpm : 1245
 Tolerance 1/min : ± 5
 rack travel mm : 4.00
 Rated speed rpm : 1390
 Tolerance 1/min : ± 15
 rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1500

LOW IDLE

control lever
 position degree : 73.0
 Setting point w/out bumper spring
 Rated speed rpm : 200
 CRT mm min. : > 4.50

Testing:

Rated speed rpm	:	300
rack travel mm	:	4.00
Tolerance mm	:	+ - 0.10

TORQUE CONTROL

Rated speed rpm	:	1200
rack travel mm	:	11.90
Tolerance mm	:	+ - 0.05

Rated speed rpm	:	750
rack travel mm	:	11.90
Tolerance mm	:	+ - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

CRT ZERO POSITION

Rack travel in mm	:	9.70
Tolerance mm	:	+ - 0.10

Rated speed rpm	:	500
Pressure hPa	:	1000
rack travel mm	:	11.90
Tolerance mm	:	+ - 0.10

Rated speed rpm	:	500
Pressure hPa	:	-
Tolerance mm	:	+ - 0.10

MEASUREMENT

Rated speed rpm	:	500
-----------------	---	-----

Pressure hPa	:	350
rack travel mm	:	1.30
Tolerance mm	:	+ - 0.10

Pressure hPa	:	250
rack travel mm	:	0.65
Tolerance mm	:	+ - 0.10

Start interlock

Rated speed rpm	:	> 100
Rated speed rpm	:	< 220

Check speed 1/min	:	> 80
Check speed 1/min	:	< 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure	:	
hPa	:	1000
Rated speed rpm	:	750
Del. quantity		
cm ³ /1000 strokes	:	96.0
Tolerance		
cm ³ /1000 strokes	:	+ - 1.5
Check tolerance		
cm ³ /1000S.	:	+ - 4.0
Spread		
Tolerance		
cm ³ /1000 strokes	:	6.0
Check tolerance		
cm ³ /1000S.	:	9.0

Aneroid pressure	:	
hPa	:	-
Rated speed rpm	:	500
Del. quantity		
cm ³ /1000 strokes	:	61.0
Tolerance		
cm ³ /1000 strokes	:	+ - 1.0
Check tolerance		
cm ³ /1000S.	:	+ - 3.0

STARTING FUEL DELIVERY

Rated speed rpm	:	100
Del. quantity		
cm ³ /1000 strokes	:	125.0
Tolerance		
cm ³ /1000 strokes	:	+ - 5.0
Check tolerance		
cm ³ /1000S.	:	+ - 8.0

LOW IDLE

Rated speed rpm	:	300
Rack travel in mm	:	4.00
Tolerance mm	:	+ - 0.10
Del. quantity		
cm ³ /1000 strokes	:	12.0
Tolerance		
cm ³ /1000 strokes	:	+ - 2.0
Check tolerance		
cm ³ /1000S.	:	+ - 4.5
Spread		

Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.04.96
Test oil : ISO 4113

Combination No. : 0 402 746 953

Injection pump
Pump designation : PES6P120A320RS7294
EP type number : 0 412 726 895

Governor
Governor design. : RQV275...1000PA1001
: -1
Governor no. : 0 421 813 936

Cust. part No. : CCEP-5135 66-213

Customer-spec. information

Customer : RENAULT V.I.
Motor : MIDR 063540 J/3
Power KW : 306.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 13.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.50
Check
tolerance °NW : + 0.70

Barrel no. : 1

CRT ZERO POSITION

Rack travel in mm : 13.70
Tolerance mm : + 0.05

BASIC SETTING

Rated speed rpm : 600
Del. quantity cm³/1000 strokes : 309.0
Tolerance cm³/1000 strokes : ± 1.0
Check tolerance cm³/1000S. : ± 4.0
Spred
Tolerance cm³/1000 strokes : 5.0
Check tolerance cm³/1000S. : 9.0

Rated speed rpm : 300
Rack travel in mm : -8.60
Tolerance mm : ± 0.10
Del. quantity cm³/1000 strokes : 30.0
Tolerance cm³/1000 strokes : ± 2.0
Check tolerance cm³/1000S. : ± 6.0
Spred
Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1086
guide sleeve travel mm : 8.46
Tolerance mm : ± 0.10

Rated speed rpm : 275
guide sleeve travel mm : 1.29
Tolerance mm : ± 0.10

Rated speed rpm : 773

guide sleeve travel mm : 6.09
Tolerance mm : ± 0.20
Rated speed rpm : 343
guide sleeve travel mm : 2.33
Tolerance mm : ± 0.20
Rated speed rpm : 393
guide sleeve travel mm : 2.99
Tolerance mm : ± 0.20
Rated speed rpm : 490
guide sleeve travel mm : 3.81
Tolerance mm : ± 0.20
Rated speed rpm : 1370
guide sleeve travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever position degree : - 1
Rated speed rpm : 1185

Rack travel in mm : 12.60
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 309.0
Tolerance cm³/1000 strokes : ± 1.0
Check tolerance cm³/1000S. : ± 4.0
Spred
Tolerance cm³/1000 strokes : 5.0
Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever position degree : 302.0
tolerance degree : ± 4.0

RATED SPEED
 rack travel mm : -1.00
 Rated speed rpm : 1080
 Tolerance 1/min : + - 5

 rack travel mm : -9.70
 Rated speed rpm : 1220
 Tolerance 1/min : + - 15

 rack travel mm : -13.25
 Tolerance mm : + - 0.55
 Rated speed rpm : 1350

LOW IDLE

control lever
 position degree : 246.0
 tolerance degree : + - 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : -8.60
 Tolerance mm : + - 0.10

 Rated speed rpm : 200

 CRT mm max. : < -7.20

 Rated speed rpm : 370

TORQUE CONTROL

Rated speed rpm : 600

Rated speed rpm : 1000
 Tolerance mm : + - 0.10

 Rated speed rpm : 500
 rack travel mm : -5.50
 Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING
 Rated speed rpm : 500
 Pressure hPa : 1000

 Rated speed rpm : 500
 Pressure hPa : -
 rack travel mm : -4.90

Tolerance mm : + - 0.20

MEASUREMENT
 Rated speed rpm : 500

 Pressure hPa : 240
 rack travel mm : -3.70
 Tolerance mm : + - 0.20

 Pressure hPa : 600
 rack travel mm : -0.85
 Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 100
 Rated speed rpm : < 225

 Check speed 1/min : > 80
 Check speed 1/min : < 245

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1000
 Rated speed rpm : 1000
 Del. quantity cm³/1000 strokes : 286.0
 Tolerance cm³/1000 strokes : + - 3.0
 Check tolerance cm³/1000S. : + - 6.0

Aneroid pressure
 hPa : 1000
 Rated speed rpm : 500
 rack travel mm : -5.50
 Tolerance mm : + - 0.10
 Del. quantity cm³/1000 strokes : 137.0
 Tolerance cm³/1000 strokes : + - 5.0
 Check tolerance cm³/1000S. : + - 8.0
 Spread
 Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

Aneroid pressure
 hPa : -

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 152.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : + - 10.0
Check tolerance
cm³/1000S. : + - 14.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : -8.60
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.10.94
Test oil : ISO 4113

Combination No. : 0 402 036 744

Injection pump
Pump designation : PES6P120A720/3LS3255
EP type number : 0 412 026 739

Governor
Governor design. : RQV300...1000PA876
: -12
Governor no. : 0 421 813 897

Cust. part No. : 3-7039

Customer-spec. information

Customer : MAN
Motor : D2866LF05
Power KW : 272.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.75
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 15.00
Tolerance mm : + 1.50

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
: -300

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.15
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 245.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance cm³/1000S. : + - 4.0

Spred

Tolerance cm³/1000 strokes : 8.0

Check tolerance cm³/1000S. : 12.0

Rated speed rpm : 300

Rack travel in mm : 5.00

Tolerance mm : + - 0.10

Del. quantity cm³/1000 strokes : 20.0

Tolerance cm³/1000 strokes : + - 3.0

Check tolerance cm³/1000S. : + - 6.0

Spred

Tolerance cm³/1000 strokes : 8.0

Check tolerance cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree : - 1
Rated speed rpm : 1100

Rack travel in mm : 16.50
Tolerance mm : + - 1.30

CONTROL LEVER

control lever position degree : 302.0
tolerance degree : + - 4.0

RATED SPEED
rack travel mm : 14.10
Rated speed rpm : 1045
Tolerance 1/min : + - 5

rack travel mm : 4.00
Rated speed rpm : 1165

Tolerance 1/min : + - 15

rack travel mm : 0.50

Tolerance mm : + - 0.50

Rated speed rpm : 1300

LOW IDLE

control lever position degree : 258.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 6.50

Testing:

Rated speed rpm : 300
rack travel mm : 5.00
Tolerance mm : + - 0.10

Rated speed rpm : 340

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 15.15
Tolerance mm : + - 0.05

Rated speed rpm : 1000
rack travel mm : 15.15
Tolerance mm : + - 0.05

Rated speed rpm : 700
rack travel mm : 8.00
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 15.15
Tolerance mm : + - 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 12.10
Tolerance mm : + - 0.10

MEASUREMENT

Rated speed rpm : 500
 Pressure hPa : 470
 rack travel mm : 14.20
 Tolerance mm : \pm 0.20
 Pressure hPa : 110
 rack travel mm : 12.35
 Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100
 Rated speed rpm : < 220
 Check speed 1/min : > 80
 Check speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1200
 Rated speed rpm : 1000
 Del. quantity
 cm³/1000 strokes : 245.0
 Tolerance
 cm³/1000 strokes : \pm 2.0
 Check tolerance
 cm³/1000S. : \pm 5.0

Aneroid pressure
 hPa : -
 Rated speed rpm : 700
 rack travel mm : 8.00
 Tolerance mm : \pm 0.10
 Del. quantity
 cm³/1000 strokes : 94.0
 Tolerance
 cm³/1000 strokes : \pm 5.0
 Check tolerance
 cm³/1000S. : \pm 8.0
 Spread
 Tolerance
 cm³/1000 strokes : 10.0

Aneroid pressure
 hPa : -
 Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 139.0

Tolerance
 cm³/1000 strokes : \pm 1.0
 Check tolerance
 cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
 Del. quantity
 cm³/1000 strokes : 220.0
 Tolerance
 cm³/1000 strokes : \pm 10.0
 Check tolerance
 cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300
 Rack travel in mm : 5.00
 Tolerance mm : \pm 0.10
 Del. quantity
 cm³/1000 strokes : 20.0
 Tolerance
 cm³/1000 strokes : \pm 3.0
 Check tolerance
 cm³/1000S. : \pm 6.0
 Spread
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.11.96
Test oil : ISO 4113

Combination No. : 0 402 746 894

Injection pump
Pump designation : PES6P110A320RS7208
EP type number : 0 412 716 803

Governor
Governor design. : RQV275...1175PA942
: -1K
Governor no. : 0 421 815 244

Cust. part No. : CCEP 5100A

Customer-spec. information

Customer : RENAULT V.I.
Motor : MIDR060226 M
Power KW : 210.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.15
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 13.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.50
Check tolerance °NW : + 0.75

Barrel no. : 1

CRT ZERO POSITION

Rack travel in mm : 14.05
Tolerance mm : + 0.05

BASIC SETTING

Rated speed rpm : 1175
Del. quantity cm³/1000 strokes : 171.0
Tolerance cm³/1000 strokes : + - 1.0
Check tolerance cm³/1000S. : + - 3.5
Spread
Tolerance cm³/1000 strokes : 4.0
Check tolerance cm³/1000S. : 7.5

Rated speed rpm : 275
Rack travel in mm : -8.80
Tolerance mm : + - 0.20
Del. quantity cm³/1000 strokes : 21.0
Tolerance cm³/1000 strokes : + - 2.5
Check tolerance cm³/1000S. : + - 5.0
Spread
Tolerance cm³/1000 strokes : 4.5
Check tolerance cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1256
guide sleeve travel mm : 9.17
Tolerance mm : + - 0.25
Rated speed rpm : 275
guide sleeve travel mm : 1.00
Tolerance mm : + - 0.25
Rated speed rpm : 888

guide sleeve travel mm : 6.57
Tolerance mm : + - 0.25
Rated speed rpm : 390
guide sleeve travel mm : 2.39
Tolerance mm : + - 0.25
Rated speed rpm : 440
guide sleeve travel mm : 3.01
Tolerance mm : + - 0.25
Rated speed rpm : 550
guide sleeve travel mm : 3.92
Tolerance mm : + - 0.25
Rated speed rpm : 1650
guide sleeve travel mm : 13.50
Tolerance mm : + - 0.50

GUIDE SLEEVE POSITION

control lever position degree : - 1
Rated speed rpm : 1400
Rack travel in mm : 13.00
Tolerance mm : + - 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1175
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 171.0
Tolerance cm³/1000 strokes : + - 1.0
Check tolerance cm³/1000S. : + - 3.5
Spread
Tolerance cm³/1000 strokes : 4.0
Check tolerance cm³/1000S. : 7.5

CONTROL LEVER

control lever position degree : 114.0
tolerance degree : + - 4.0

RATED SPEED
rack travel mm : -1.00
Rated speed rpm : 1245
Tolerance 1/min : + - 5

rack travel mm : -10.05
Rated speed rpm : 1430
Tolerance 1/min : + - 15

rack travel mm : -13.55
Tolerance mm : + - 0.55
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 60.0
tolerance degree : + - 4.0

Testing:

Rated speed rpm : 275
rack travel mm : -8.80
Tolerance mm : + - 0.20

Rated speed rpm : 200

CRT mm max. : < -8.20

Rated speed rpm : 415

TORQUE CONTROL

Rated speed rpm : 1175

Rated speed rpm : 700
rack travel mm : -0.70
Tolerance mm : + - 0.10

Rated speed rpm : 700
rack travel mm : -6.05
Tolerance mm : + - 0.10

Rated speed rpm : 800
rack travel mm : -0.35
Tolerance mm : + - 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1175

Pressure hPa : 1000
Rated speed rpm : 1175
Pressure hPa : -
rack travel mm : -3.30
Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 1175
Pressure hPa : 240
rack travel mm : -2.70
Tolerance mm : + - 0.20

Pressure hPa : 520
rack travel mm : -1.45
Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 150
Rated speed rpm : < 200

Check
speed 1/min : > 130
Check
speed 1/min : < 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 700
Del. quantity
cm3/1000 strokes : 151.0
Tolerance
cm3/1000 strokes : + - 3.0
Check tolerance
cm3/1000S. : + - 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 700
rack travel mm : -6.05
Tolerance mm : + - 0.10
Del. quantity
cm3/1000 strokes : 55.0
Tolerance
cm3/1000 strokes : + - 5.0
Check tolerance
cm3/1000S. : + - 8.0
Speed
Tolerance
cm3/1000 strokes : 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 75.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : + - 15.0
Check tolerance
cm³/1000S. : + - 19.0

LOW IDLE

Rated speed rpm : 275
Rack travel in mm : -8.80
Tolerance mm : + - 0.20
Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : + - 2.5
Check tolerance
cm³/1000S. : + - 5.0
Speed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.03.97
Test oil : ISO 4113

Combination No. : 0 402 746 957

Injection pump
Pump designation : PES6P120A720RS7292
: -1
EP type number : 0 412 726 939

Governor
Governor design. : RQV350...115UPA1074
: -2K
Governor no. : 0 421 815 367

Cust. part No. : 0250741002

Customer-spec. information

Customer : MB-NFZ
Motor : OM366LA
Power KW : 157.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 100
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5

Tolerance bar : + 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.00
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery blocking

°NW after s.o.d. : 3.30
Tolerance : + 0.10
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.10
Tolerance mm : + - 0.05

Del. quantity
cm³/1000 strokes : 269.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 6.00
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : + - 3.0

Check tolerance
cm³/1000S. : + - 6.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1206

guide sleeve
travel mm : 9.35
Tolerance mm : + - 0.15

Rated speed rpm : 350
guide sleeve
travel mm : 1.53
Tolerance mm : + - 0.20

Rated speed rpm : 855

guide sleeve
travel mm : 5.56
Tolerance mm : + - 0.25

Rated speed rpm : 550
guide sleeve
travel mm : 3.17
Tolerance mm : + - 0.25

Rated speed rpm : 1480
guide sleeve
travel mm : 13.50
Tolerance mm : + - 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1331

Rack travel in mm : 13.50
Tolerance mm : + - 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 269.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 109.0
tolerance degree : + - 4.0

RATED SPEED
rack travel mm : 13.40
Rated speed rpm : 1195
Tolerance 1/min : + - 5

rack travel mm : 4.00
Rated speed rpm : 1325
Tolerance 1/min : + - 15

rack travel mm : 0.70
Tolerance mm : + - 0.70
Rated speed rpm : 1400

LOW IDLE

control lever position degree : 65.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 250

CRT mm min. : > 6.90

Testing:

Rated speed rpm : 350
rack travel mm : 6.00
Tolerance mm : + - 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 14.10
Tolerance mm : + - 0.05

Rated speed rpm : 950
rack travel mm : 13.95
Tolerance mm : + - 0.10

Rated speed rpm : 750
rack travel mm : 13.40
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1150
Pressure hPa : 1500
rack travel mm : 14.10
Tolerance mm : + - 0.05

Rated speed rpm : 1150
Pressure hPa : -
rack travel mm : 10.10
Tolerance mm : + - 0.15

MEASUREMENT

Rated speed rpm : 1150

Pressure hPa : 400
rack travel mm : 10.90
Tolerance mm : + - 0.05

Pressure hPa : 850
rack travel mm : 12.50
Tolerance mm : + - 0.15

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 200

Check speed 1/min : > 80
Check speed 1/min : < 250

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1500
Rated speed rpm : 750
rack travel mm : 13.40
Tolerance mm : + - 0.10
Del. quantity cm³/1000 strokes : 265.0
Tolerance cm³/1000 strokes : + - 2.0
Check tolerance cm³/1000S. : + - 5.0
Spread
Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000S. : 12.0

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 120.0
Tolerance cm³/1000 strokes : + - 1.0
Check tolerance cm³/1000S. : + - 4.0

STARTING FUEL DELIVERY

Set starting CRT at K-cam.

Rated speed rpm : 100
rack travel mm : 13.50
Tolerance mm : + - 0.20
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : + - 15.0
Check tolerance
cm³/1000S. : + - 19.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 6.00
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.11.91
 Test oil : ISO-4113
 Combination No. : 0 400 866 154
 Injection pump
 Pump designation : PES6A100D320/3RS2691
 : -4
 EP type number : 9 410 230 030
 Governor
 Governer design. : RSV450...1100A0C2241
 : R
 Governer no. : 0 420 233 256
 Cust. part No. :

Customer-spec. information
 Customer : C.D.C.
 Motor : 6CT830
 Power KW : 134.2

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 40.0
 Tolerance °C : ± 2.0
 Overflow valve : 1 417 413 047
 Inlet press. bar : 1.50
 Test nozzle holder assembly : 1 688 901 101
 Opening pressure bar : 208.5
 Tolerance bar : ± 1.5
 Test Lines : 1 680 750 014
 Outside diameter : 6.00

x inside diameter : 2.00
 x length mm : 600

REMARKS

: C.D.C. # 3915995

Adjust stop lever to 0.5...1.0 mm before stop.

Start-of-delivery mark 11° cam angle after start of delivery cyl. 1

Adjustment without torque-control spring retainer with 0,5 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

(A) INJECTION PUMP SETTING VALUES
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure bar : 28.0
 Tolerance bar : ± 1.0

Prestroke mm : 2.85
 Tolerance mm : ± 0.05
 Check tolerance mm : ± 0.10
 Rack travel in mm : 10.50
 Firing order : 1- 5- 3- 6- 2
 : - 4

Phasing : 0-60-120-180-240
 : -300
 Tolerance : ± 0.50
 Check tolerance °NW : ± 0.75

Start of delivery mark

°NW after s.o.d. : 11.0

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 104.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 3.00

Spred

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 450.0

Rack travel in mm : 5.80
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 18.00

Tolerance
cm³/1000 strokes : ± 2.00

Check tolerance
cm³/1000S. : ± 4.50

Spred

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 5.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : -3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : ?

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 104.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 3.00
Spred
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 53.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.20
Rated speed rpm : 1145.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1225.0
Tolerance 1/min : ± 15.0

rack travel mm : 4.00
Rated speed rpm : 1230.0

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 33.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 450
rack travel mm : 5.3

Rated speed rpm : 100

CRT mm min. : 19.00

Testing:

Rated speed rpm : 450
rack travel mm : 5.80
Tolerance mm : ± 0.10

TORQUE CONTROL
Rated speed rpm : 1100
rack travel mm : 11.25
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 12.10
Tolerance mm : ± 0.10

**ANEROID/ALTITUDE
COMPENSATOR TEST**

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 12.10
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : -
rack travel mm : 10.75
Tolerance mm : ± 0.05

Pressure hPa : 305
rack travel mm : 11.15
Tolerance mm : ± 0.05

Pressure hPa : 425
rack travel mm : 11.70
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 750

Del. quantity
cm³/1000 strokes : 114.50
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 81.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 3.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 145.00
Tolerance
cm³/1000 strokes : ± 10.00
Check tolerance
cm³/1000S. : ± 15.00

LOW IDLE

Rated speed rpm : 450.0

Rack travel in mm : 5.80
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 18.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.50
Spread
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 5.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.12.92
Test oil : ISO-4113

Combination No. : 0 402 036 743

Injection pump
Pump designation : PES6P120A720/3LS3255
EP type number : 0 412 026 739

Governor
Governor design. : RQ300/1000PA813-19
Governor no. : 0 421 801 561

Cust. part No. :

Customer-spec. information

Customer : MAN
Motor : D2866LF05
Power KW : 272.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.00

x inside diameter : 3.00
x Length mm : 1000

REMARKS

: MAN-NR. 3-7037

Setting and blocking of pointer of
start-of-delivery sensor on cyl. 6
start of delivery

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 15.00
Tolerance mm : ± 0.50

Firing order : 6- 2- 4- 1- 5
: - 3

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 245.00

Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00

Spred
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300.0
Rack travel in mm : 5.00
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 20.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00

Spred
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : -2
Rated speed rpm : 550
Rack travel in mm : 20.00
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 245.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00

Spred
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED
rack travel mm : 20.0
Rated speed rpm : 550
rack travel mm : 14.10
Rated speed rpm : 1052.5
Tolerance 1/min : ± 7.5
rack travel mm : 4.00
Rated speed rpm : 1170.0
Tolerance 1/min : ± 15.0
rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1300

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 300
rack travel mm : 5.0
Rated speed rpm : 200
CRT mm min. : 6.50
Testing:
Rated speed rpm : 300
rack travel mm : 5.00
Tolerance mm : ± 0.20
rack travel mm : 2.00
Rated speed rpm : 380.0
Tolerance 1/min : ± 20.0

TORQUE CONTROL

Dimension a mm : ?
Rated speed rpm : 700
rack travel mm : 15.15
Tolerance mm : ± 0.05
Rated speed rpm : 700
rack travel mm : 15.60
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 15.15
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.90
Tolerance mm : \pm 0.10

Pressure hPa : 110
rack travel mm : 12.15
Tolerance mm : \pm 0.05

Pressure hPa : 470
rack travel mm : 14.00
Tolerance mm : \pm 0.20

Start interlock

Rated speed rpm : 220
Check speed 1/min : 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1000
Del. quantity
cm3/1000 strokes : 244.00
Tolerance
cm3/1000 strokes : \pm 3.00
Check tolerance
cm3/1000S. : \pm 6.00

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 135.00
Tolerance
cm3/1000 strokes : \pm 1.00

Check tolerance
cm3/1000S. : \pm 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 200.00
Tolerance
cm3/1000 strokes : \pm 10.00
Check tolerance
cm3/1000S. : \pm 14.00

LOW IDLE

Rated speed rpm : 300.0
Rack travel in mm : 5.00
Tolerance mm : \pm 0.20
Del. quantity
cm3/1000 strokes : 20.00
Tolerance
cm3/1000 strokes : \pm 3.00
Check tolerance
cm3/1000S. : \pm 6.00
Spred
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 26.05.97

Test oil : ISO-4113

Combination No. : 0 402 046 858

Injection pump

Pump designation : PES6P110A320LS3330
EP type number : 0 412 016 745

Governor

Governer design. : RQV350...1250PA1127K
Governer no. : 0 421 815 384

Cust. part No. :

Customer-spec. information

Customer : NAVISTAR

Motor : DTA-408

Power KW : 138.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.80

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.00

x inside diameter : 3.00

x length mm : 600

REMARKS

: NAVISTAR #1823105C91

Start-of-delivery blocking at start of delivery of cylinder no. 1.

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 3.00

Tolerance mm : ± 0.05

Check tolerance mm : ± 0.15

Rack travel in mm : 15.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 12.35

Tolerance mm : ± 0.05

Del. quantity cm³/1000 strokes : 112.00

Tolerance cm³/1000 strokes : ± 1.00

Check tolerance mm/1000S. :
 : ± 3.00
 Spred
 Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. :
 : 12.0
 Rated speed rpm : 325
 Rack travel in mm : 7.70
 Tolerance mm : ± 0.10
 Del. quantity cm³/1000 strokes : 28.00
 Tolerance cm³/1000 strokes : ± 2.00
 Check tolerance cm³/1000S. : ± 5.00
 Spred
 Tolerance cm³/1000 strokes : 4.0
 Check tolerance cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
 guide sleeve travel mm : 2.00
 Tolerance mm : ± 0.10
 Rated speed rpm : 500
 guide sleeve travel mm : 4.30
 Tolerance mm : ± 0.20
 Rated speed rpm : 850
 guide sleeve travel mm : 7.20
 Tolerance mm : ± 0.20
 Rated speed rpm : 1250
 guide sleeve travel mm : 9.60
 Tolerance mm : ± 0.10
 Rated speed rpm : 1450
 guide sleeve travel mm : 11.20

Tolerance mm : ± 0.20

GUIDE SLEEVE POSITION

control lever position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
 Aneroid pressure hPa : 1200
 Del. quantity cm³/1000 strokes : 112.00
 Tolerance cm³/1000 strokes : ± 1.00
 Check tolerance cm³/1000S. : ± 3.00
 Spred
 Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

CONTROL LEVER

control lever position degree : 120.0
 tolerance degree : ± 6.0

RATED SPEED

rack travel mm : 11.90
 Rated speed rpm : 1305.0
 Tolerance 1/min : ± 15.0
 rack travel mm : 4.00
 Rated speed rpm : 1455.0
 Tolerance 1/min : ± 5.0
 rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1600

LOW IDLE

control lever position degree : 79.0
 tolerance degree : ± 6.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 7.7

Testing:

Rated speed rpm : 325
rack travel mm : 7.70
Tolerance mm : \pm 0.10

Rated speed rpm : 275

CRT mm max. : 8.50

TORQUE CONTROL

Dimension a mm : ?
Rated speed rpm : 850
rack travel mm : 12.35
Tolerance mm : \pm 0.05

Rated speed rpm : 1250
rack travel mm : 13.10
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 12.00
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1200
rack travel mm : 13.10
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 1250

Pressure hPa : -
rack travel mm : 11.00
Tolerance mm : \pm 0.20

Pressure hPa : 250
rack travel mm : 11.35
Tolerance mm : \pm 0.05

Pressure hPa : 450
rack travel mm : 12.50
Tolerance mm : \pm 0.20

Start interlock

B14

Rated speed rpm : 280

Check speed 1/min : 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1200
Rated speed rpm : 1250
Del. quantity cm³/1000 strokes : 128.00
Tolerance cm³/1000 strokes : \pm 2.00
Check tolerance cm³/1000S. : \pm 4.00
Spread
Tolerance cm³/1000 strokes : 8.00
Check tolerance cm³/1000S. : 12.0

rack travel mm : 12.00
Tolerance mm : \pm 0.20

Aneroid pressure hPa : -
Rated speed rpm : 1250
Del. quantity cm³/1000 strokes : 88.50
Tolerance cm³/1000 strokes : \pm 2.00
Check tolerance cm³/1000S. : \pm 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 1.00
Del. quantity cm³/1000 strokes : 140.00
Tolerance cm³/1000 strokes : \pm 20.00
Check tolerance cm³/1000S. : \pm 25.00

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 7.70
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 28.00
Tolerance
cm³/1000 strokes : \pm 2.00
Check tolerance
cm³/1000S. : \pm 5.00
Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.06.97
Test oil : ISO-4113

Combination No. : 0 402 648 971

Injection pump
Pump designation : PE8P120A320LS7830
EP type number : 0 412 628 844

Governor
Governor design. : RQV350...1050PA1109
Governor no. : 0 421 814 078

Cust. part No. :

Customer-spec. information

Customer : MTU
Motor : 8V 183 TE72

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.00

x inside diameter : 3.00
x length mm : 1000

REMARKS

* = Set at reduced delivery stop.

APPLICATION

Ship

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10

Rack travel in mm : 20.25
Tolerance mm : ± 0.75

Firing order : 8-7-2-6-3-5-4-1

Phasing : 0-45-90-135-180-225
: -270-315
Tolerance : ± 0.50
Check tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 261.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance cm³/1000S. : ± 4.00

Spread

Tolerance cm³/1000 strokes : 5.0

Check tolerance cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.20
Tolerance mm : ± 0.30

Del. quantity cm³/1000 strokes : 15.00

Tolerance cm³/1000 strokes : ± 3.00

Check tolerance cm³/1000S. : ± 6.00

Spread

Tolerance cm³/1000 strokes : 6.0

Check tolerance cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
guide sleeve travel mm : 1.53
Tolerance mm : ± 0.20

Rated speed rpm : 570
guide sleeve travel mm : 3.57
Tolerance mm : ± 0.25

Rated speed rpm : 900
guide sleeve travel mm : 5.69
Tolerance mm : ± 0.25

Rated speed rpm : 1204
guide sleeve travel mm : 10.00
Tolerance mm : ± 0.25

Rated speed rpm : 1300
guide sleeve travel mm : 11.50

Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever position degree : -1
Rated speed rpm : 1170

Rack travel in mm : 12.35
Tolerance mm : ± 0.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure hPa : 2000

Del. quantity cm³/1000 strokes : 261.00

Tolerance cm³/1000 strokes : ± 1.00

Check tolerance cm³/1000S. : ± 4.00

Spread

Tolerance cm³/1000 strokes : 5.0

Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever position degree : 120.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.35
Rated speed rpm : 1105.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1185.0
Tolerance 1/min : ± 15.0

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 66.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 250

CRT mm min. : 6.70

Testing:

Rated speed rpm : 350
rack travel mm : 5.20
Tolerance mm : \pm 0.30

TORQUE CONTROL
Rated speed rpm : 1050
rack travel mm : 13.35
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 7.00
Tolerance mm : \pm 0.15

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 400
rack travel mm : 8.45
Tolerance mm : \pm 0.05

Pressure hPa : 1200
rack travel mm : 13.05
Tolerance mm : \pm 0.20

Pressure hPa : 2000
rack travel mm : 13.35
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 2000
Rated speed rpm : 750

+ Del. quantity
cm3/1000 strokes : 254.00
Tolerance
cm3/1000 strokes : \pm 3.00
Check tolerance
cm3/1000S. : \pm 6.00
Spred
Tolerance
cm3/1000 strokes : 8.00
Check tolerance
cm3/1000S. : 12.0

+ Aneroid pressure
hPa : 2000
Rated speed rpm : 1050
Del. quantity
cm3/1000 strokes : 195.00
Tolerance
cm3/1000 strokes : \pm 2.00
Check tolerance
cm3/1000S. : \pm 5.00

+ Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 99.00
Tolerance
cm3/1000 strokes : \pm 1.00
Check tolerance
cm3/1000S. : \pm 3.50
Spred
Tolerance
cm3/1000 strokes : 8.00
Check tolerance
cm3/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 345.00
Tolerance
cm3/1000 strokes : \pm 10.00
Check tolerance
cm3/1000S. : \pm 14.00

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.20
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 15.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Spred
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.02.94
Test oil : ISO-4113

Combination No. : 0 403 466 146

Injection pump
Pump designation : PES6MW100/120RS1137
: -1
EP type number : 0 413 406 157

Governor
Governor design. : RSV500...1100MW2A335
: -7
Governor no. : 0 420 085 235

Cust. part No. :

Customer-spec. information
Customer : CDC
Motor : 6CTA
Power KW : 172.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.50

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.00

x inside diameter : 2.00
x Length mm : 600

REMARKS

: CDC #3926219

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
: - 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

°NW after s.o.d. : 11.00

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 132.50

Tolerance cm³/1000 strokes : ± 1.00
 Check tolerance cm³/1000S. : ± 4.00
 Spread
 Tolerance cm³/1000 strokes : 4.0
 Check tolerance cm³/1000S. : 7.0
 Rated speed rpm : 500
 Rack travel in mm : 6.40
 Tolerance mm : ± 0.10
 Del. quantity cm³/1000 strokes : 21.00
 Tolerance cm³/1000 strokes : ± 2.00
 Check tolerance cm³/1000S. : ± 4.50
 Spread
 Tolerance cm³/1000 strokes : 3.0
 Check tolerance cm³/1000S. : 5.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree : -3
 Rated speed rpm : 800
 Rack travel in mm : 0.65
 Tolerance mm : ± 0.35
 governor spring pre-tension
 click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
 Aneroid pressure hPa : 1200
 Del. quantity cm³/1000 strokes : 132.50

Tolerance cm³/1000 strokes : ± 1.00
 Check tolerance cm³/1000S. : ± 4.00
 Spread
 Tolerance cm³/1000 strokes : 4.0
 Check tolerance cm³/1000S. : 7.0

CONTROL LEVER

control lever position degree : 102.0
 tolerance degree : ± 4.0
 RATED SPEED
 rack travel mm : 12.30
 Rated speed rpm : 1160.0
 Tolerance 1/min : ± 10.0
 rack travel mm : 4.00
 Rated speed rpm : 1265.0
 Tolerance 1/min : ± 5.0
 rack travel mm : 1.00
 Tolerance mm : ± 0.70
 Rated speed rpm : 1350

LOW IDLE

control lever position degree : 81.0
 tolerance degree : ± 4.0
 Setting point w/out bumper spring
 Rated speed rpm : 500
 rack travel mm : 6.40
 Rated speed rpm : 100
 CRT mm min. : 19.0
 Testing:
 Rated speed rpm : 500
 rack travel mm : 6.40
 Tolerance mm : ± 0.10
 SET IDLE AUXILIARY SPRING
 rack travel mm : 4.00

TORQUE CONTROL
Rated speed rpm : 1100
rack travel mm : 13.3^e
Tolerance mm : \pm .05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 14.50
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : -
rack travel mm : 11.45
Tolerance mm : \pm 0.10

Pressure hPa : 275
rack travel mm : 12.15
Tolerance mm : \pm 0.05

Pressure hPa : 425
rack travel mm : 13.30
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 132.50
Tolerance
cm³/1000 strokes : \pm 1.00
Check tolerance
cm³/1000S. : \pm 4.00
Spread
Tolerance
cm³/1000 strokes : 4.00
Check tolerance
cm³/1000S. : 7.5

STARTING FUEL DELIVERY

Rated speed rpm : 100

+ Del. quantity
cm³/1000 strokes : 130.00
Tolerance
cm³/1000 strokes : \pm 10.00
Check tolerance
cm³/1000S. : \pm 13.00

LOW IDLE

Rated speed rpm : 500
Rack travel in mm : 6.40
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 21.00
Tolerance
cm³/1000 strokes : \pm 2.00
Check tolerance
cm³/1000S. : \pm 4.50
Spread
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 5.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 11.09.97
Test oil : ISO 4113

Combination No. : 9 400 030 696

Injection pump
Pump designation : PES6A95D320/3RS2881
EP type number : 9 410 037 215

Governor
Governer design. : RSV475...1250A0C826R
Governer no. : 9 420 034 700

Cust. part No. : 3928662

Customer-spec. information

Customer : CUMMINS
Motor : 6BT - 165 HP

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery blocking

°NW after s.o.d. : 7.00
Tolerance : + 0.10
Check
tolerance °NW : + 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.60

Tolerance mm : \pm 0.05
 Del. quantity cm³/1000 strokes : 106.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 3.0
 Spread
 Tolerance cm³/1000 strokes : 4.0
 Check tolerance cm³/1000S. : 6.5
 Rated speed rpm : 475
 Rack travel in mm : 5.50
 Tolerance mm : \pm 0.10
 Del. quantity cm³/1000 strokes : 20.5
 Tolerance cm³/1000 strokes : \pm 2.0
 Check tolerance cm³/1000S. : \pm 4.5
 Spread
 Tolerance cm³/1000 strokes : 6.0
 Check tolerance cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : \pm 0.20
 governor spring pre-tension :
 click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
 Aneroid pressure hPa : 800

Del. quantity cm³/1000 strokes : 106.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 3.0
 Spread
 Tolerance cm³/1000 strokes : 4.0
 Check tolerance cm³/1000S. : 6.5

CONTROL LEVER

control lever position degree : 111.0
 tolerance degree : \pm 4.0
 RATED SPEED
 rack travel mm : 11.60
 Rated speed rpm : 1315
 Tolerance 1/min : \pm 5
 rack travel mm : 4.00
 Rated speed rpm : 1415
 Tolerance 1/min : \pm 5
 rack travel mm : 0.85
 Tolerance mm : \pm 0.55
 Rated speed rpm : 1500
 rack travel mm : 4.00
 Tolerance mm : \pm 0.05
 Rated speed rpm : 1420
 Tolerance 1/min : \pm 15

LOW IDLE

control lever position degree : 85.0
 tolerance degree : \pm 4.0
 Setting point w/out bumper spring
 Rated speed rpm : 475
 rack travel mm : 5.00
 Tolerance mm : \pm 0.10
 Rated speed rpm : 100
 CRT mm min. : > 19.50
 Testing:

Rated speed rpm : 475
rack travel mm : 5.50
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 575
Tolerance 1/min : + - 30

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 12.60
Tolerance mm : + - 0.05

Rated speed rpm : 750
rack travel mm : 12.70
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 800
rack travel mm : 12.70
Tolerance mm : + - 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.00
Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 655
rack travel mm : 12.30
Tolerance mm : + - 0.20

Pressure hPa : 500
rack travel mm : 11.70
Tolerance mm : + - 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 800
Rated speed rpm : 750
Del. quantity
cm3/1000 strokes : 113.8
Tolerance
cm3/1000 strokes : + - 2.0

Check tolerance
cm3/1000S. : + - 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 88.8
Tolerance
cm3/1000 strokes : + - 1.0
Check tolerance
cm3/1000S. : + - 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : + - 0.75
Del. quantity
cm3/1000 strokes : 121.5
Tolerance
cm3/1000 strokes : + - 10.0
Check tolerance
cm3/1000S. : + - 15.0

LOW IDLE

Rated speed rpm : 475
Rack travel in mm : 5.50
Tolerance mm : + - 0.10
Del. quantity
cm3/1000 strokes : 20.5
Tolerance
cm3/1000 strokes : + - 2.0
Check tolerance
cm3/1000S. : + - 4.5
Spread
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.06.97

Test oil : ISO 4113

Combination No. : 0 400 866 198

Injection pump

Pump designation : PES6A100D320/3RS2763
EP type number : 0 410 806 006

Governor

Governer design. : RSV400...950A0C2238
: -4R

Governer no. : 0 420 233 331

Cust. part No. :

Customer-spec. information

Customer : CDC
Motor : 6 CT 8.3
Power KW : 145.0

TEST BENCH REQUIREMENTS

Inlet Line : 2.

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

°NW after s.o.d. : 10.00
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 12.15
Tolerance mm : + 0.05

Del. quantity
 cm³/1000 strokes : 121.5
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.5
 Spread
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 6.5
 Rated speed rpm : 400
 Rack travel in mm : 5.20
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 15.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spread
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : + 0.20
 governor spring
 pre-tension
 click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950

Aneroid pressure
 hPa : 900
 Del. quantity
 cm³/1000 strokes : 121.5
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.5
 Spread
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 6.5

CONTROL LEVER

control lever
 position degree : 96.0
 tolerance degree : + 4.0
 RATED SPEED
 rack travel mm : 11.10
 Rated speed rpm : 995
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 1070
 Tolerance 1/min : + 5
 rack travel mm : 0.85
 Tolerance mm : + 0.55
 Rated speed rpm : 1200
 rack travel mm : 4.00
 Rated speed rpm : 1085
 Tolerance 1/min : + 15

LOW IDLE

control lever
 position degree : 79.0
 tolerance degree : + 4.0
 Setting point w/out bumper spring
 Rated speed rpm : 400
 rack travel mm : 4.70
 Tolerance mm : + 0.10
 Rated speed rpm : 100
 CRT mm min. : > 19.00
 Testing:

Rated speed rpm : 400
rack travel mm : 5.20
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 470
Tolerance 1/min : + - 30

TORQUE CONTROL
Rated speed rpm : 950
rack travel mm : 12.15
Tolerance mm : + - 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 12.15
Tolerance mm : + - 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.80
Tolerance mm : + - 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 305
rack travel mm : 11.70
Tolerance mm : + - 0.20

Pressure hPa : 220
rack travel mm : 11.20
Tolerance mm : + - 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 76.5
Tolerance
cm3/1000 strokes : + - 2.0
Check tolerance
cm3/1000S. : + - 4.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : + - 0.75
Del. quantity
cm3/1000 strokes : 160.0
Tolerance
cm3/1000 strokes : + - 10.0
Check tolerance
cm3/1000S. : + - 13.0

LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 5.20
Tolerance mm : + - 0.10
Del. quantity
cm3/1000 strokes : 15.0
Tolerance
cm3/1000 strokes : + - 2.0
Check tolerance
cm3/1000S. : + - 4.5
Spread
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.11.97
Test oil : ISO 4113

Combination No. : 0 400 466 086

Injection pump
Pump designation : PES6A75D410/3RS1326
EP type number : 0 410 476 977

Governor
Governor design. : RSV325...900A70602L
Governor no. : 0 420 232 320

Cust. part No. :

Customer-spec. information

Customer : KHD
Motor : F6L912

TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.0

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 880

Rack travel in mm : 10.25
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 44.0

Tolerance
cm³/1000 strokes : + 0.5

Check tolerance
cm³/1000S. : + 2.0

Spread

Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm³/1000S. : 3.5

Rated speed rpm : 325

Rack travel in mm : 7.20
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 4.5
 Speed
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 3.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800
 Rack travel in mm : 0.65
 Tolerance mm : + 0.35

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 880
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 44.0
 Tolerance
 cm³/1000 strokes : + 0.5
 Check tolerance
 cm³/1000S. : + 2.0
 Speed
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 3.5

CONTROL LEVER

control lever
 position degree : 54.0
 tolerance degree : + 4.0

RATED SPEED
 rack travel mm : 9.20
 Rated speed rpm : 925
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 960
 Tolerance 1/min : + 15

rack travel mm : 1.00
 Tolerance mm : + 0.70
 Rated speed rpm : 1050
 rack travel mm : 4.00
 Rated speed rpm : 970
 Tolerance 1/min : + 15

LOW IDLE

control lever
 position degree : 25.0
 tolerance degree : + 4.0
 Setting point w/out bumper spring
 Rated speed rpm : 325
 rack travel mm : 7.70
 Tolerance mm : + 0.10
 Rated speed rpm : 100
 CRT mm min. : > 19.50
 Testing:
 Rated speed rpm : 325
 rack travel mm : 7.20
 Tolerance mm : + 0.10
 rack travel mm : 2.00
 Rated speed rpm : 430
 Tolerance 1/min : + 30

TORQUE CONTROL
 Rated speed rpm : 880
 rack travel mm : 10.25
 Tolerance mm : + 0.05
 Rated speed rpm : 500
 rack travel mm : 10.30
 Tolerance mm : + 0.10

STARTING FUEL DELIVERY

Rated speed rpm : 100

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 7.20

Tolerance mm : + - 0.10

Del. quantity

cm³/1000 strokes : 12.0

Tolerance

cm³/1000 strokes : + - 3.0

Check tolerance

cm³/1000S. : + - 4.5

Speed

Tolerance

cm³/1000 strokes : 2.0

Check tolerance

cm³/1000S. : 3.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.12.97
Test oil : ISO 4113

Combination No. : 0 403 244 036

Injection pump
Pump designation : PES4MW100/720RS1519
: -3

EP type number : 0 413 204 018

Governor
Governor design. : RQV300...1300MW132
: -5

Governor no. : 0 420 083 308

Cust. part No. : 0240740902

Customer-spec. information

Customer : MB-NFZ
Motor : OM364LA
Power KW : 77.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 4.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.00
Tolerance mm : + 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.15
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 87.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread

Tolerance
 cm³/1000 strokes : 4.5

 Check tolerance
 cm³/1000S. : 7.0

Rated speed rpm : 300

 Rack travel in mm : 4.00
 Tolerance mm : + - 0.10
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : + - 2.0
 Check tolerance
 cm³/1000S. : + - 4.5
 Spread
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1353
 guide sleeve
 travel mm : 7.76
 Tolerance mm : + - 0.25

Rated speed rpm : 300
 guide sleeve
 travel mm : 0.91
 Tolerance mm : + - 0.25

Rated speed rpm : 1140
 guide sleeve
 travel mm : 5.88
 Tolerance mm : + - 0.25

Rated speed rpm : 629
 guide sleeve
 travel mm : 3.15
 Tolerance mm : + - 0.25

Rated speed rpm : 679
 guide sleeve
 travel mm : 3.53
 Tolerance mm : + - 0.25

Rated speed rpm : 800
 guide sleeve
 travel mm : 4.00
 Tolerance mm : + - 0.25

Rated speed rpm : 1596
 guide sleeve
 travel mm : 12.00
 Tolerance mm : + - 0.25

 Rated speed rpm : 1690
 guide sleeve
 travel mm : 13.50
 Tolerance mm : + - 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : 120
 Rated speed rpm : 1500

 Rack travel in mm : 10.00
 Tolerance mm : + - 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 700
 Del. quantity
 cm³/1000 strokes : 87.0
 Tolerance
 cm³/1000 strokes : + - 1.0
 Check tolerance
 cm³/1000S. : + - 3.0
 Spread
 Tolerance
 cm³/1000 strokes : 4.5
 Check tolerance
 cm³/1000S. : 7.0

CONTROL LEVER

control lever
 position degree : 112.0
 tolerance degree : + - 4.0

RATED SPEED
 rack travel mm : 10.10
 Rated speed rpm : 1345
 Tolerance 1/min : + - 5

rack travel mm : 4.00
 Rated speed rpm : 1435
 Tolerance 1/min : + - 15

rack travel mm : 0.50
 Tolerance mm : + - 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 70.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 4.50

Testing:

Rated speed rpm : 300
rack travel mm : 4.00
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.15
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 11.15
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

CRT ZERO POSITION

Rack travel in mm : 10.80
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 11.15
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 230
rack travel mm : 0.20

Tolerance mm : \pm 0.10

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 200

Check speed 1/min : > 80
Check speed 1/min : < 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 700
Rated speed rpm : 750
Del. quantity cm3/1000 strokes : 79.0
Tolerance cm3/1000 strokes : \pm 1.5
Check tolerance cm3/1000S. : \pm 4.0
Spread
Tolerance cm3/1000 strokes : 6.0
Check tolerance cm3/1000S. : 9.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity cm3/1000 strokes : 67.0
Tolerance cm3/1000 strokes : \pm 1.0
Check tolerance cm3/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity cm3/1000 strokes : 125.0
Tolerance cm3/1000 strokes : \pm 5.0
Check tolerance cm3/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 4.00
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.5
Speed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.12.97
Test oil : ISO 4113

Combination No. : 0 403 244 036A

Injection pump
Pump designation : PES4MW100/720RS1519
: -3
EP type number : 0 413 204 018

Governor
Governor design. : RQV300...1300MW132
: -5
Governor no. : 0 420 083 308

Cust. part No. : 0240740902

Customer-spec. information

Customer : MB-NFZ
Motor : OM364LA
Power KW : 77.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 4.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.00
Tolerance mm : + 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1270

Rack travel in mm : 11.15
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 87.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread

Tolerance
 cm³/1000 strokes : 4.5
 Check tolerance
 cm³/1000S. : 7.0

Rated speed rpm : 300
 Rack travel in mm : 4.00
 Tolerance mm : ± 0.10
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 4.5
 Spread
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1353
 guide sleeve
 travel mm : 7.02
 Tolerance mm : ± 0.15

Rated speed rpm : 300
 guide sleeve
 travel mm : 0.91
 Tolerance mm : ± 0.20

Rated speed rpm : 1090
 guide sleeve
 travel mm : 5.21
 Tolerance mm : ± 0.25

Rated speed rpm : 790
 guide sleeve
 travel mm : 3.98
 Tolerance mm : ± 0.25

Rated speed rpm : 1759
 guide sleeve
 travel mm : 12.00
 Tolerance mm : ± 0.25

Rated speed rpm : 1870
 guide sleeve
 travel mm : 13.50
 Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : VL

control lever
 position degree : 115
 Rated speed rpm : 1500

Rack travel in mm : 10.00
 Tolerance mm : ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1270
 Aneroid pressure
 hPa : 700
 Del. quantity
 cm³/1000 strokes : 87.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 3.0
 Spread
 Tolerance
 cm³/1000 strokes : 4.5
 Check tolerance
 cm³/1000S. : 7.0

CONTROL LEVER

control lever
 position degree : 111.0
 tolerance degree : ± 4.0

RATED SPEED
 rack travel mm : 10.10
 Rated speed rpm : 1310
 Tolerance 1/min : ± 10

rack travel mm : 4.00
 Rated speed rpm : 1445
 Tolerance 1/min : ± 5

rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 4.70

Testing:

Rated speed rpm : 300
rack travel mm : 4.00
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1270
rack travel mm : 11.15
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 11.15
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

CRT ZERO POSITION

Rack travel in mm : 10.80
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 11.15
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 230
rack travel mm : 0.20
Tolerance mm : \pm 0.10

Start interlock

Rated speed rpm : > 100

Rated speed rpm : < 200

Check
speed 1/min : > 80
Check
speed 1/min : < 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 79.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 67.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 4.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spread
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.01.98
Test oil : ISO 4113

Combination No. : 0 401 846 370

Injection pump
Pump designation : PE6P110A320RS157
EP type number : 0 411 816 108

Governor
Governor design. : RQV250...550/1150PA1
: 40R
Governor no. : 0 421 813 184

Cust. part No. : 516208005011

Customer-spec. information

Customer : STEYR
Motor : 7 FA
Power KW : 235.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 1.5
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Del. quantity cm³/1000 strokes : 170.0

Tolerance cm³/1000 strokes : ± 1.0

Check tolerance cm³/1000s. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 250

Rack travel in mm : 6.50
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 5.5

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1150

Rack travel in mm : 16.50
Tolerance mm : + - 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Aneroid pressure

hPa : 900

Del. quantity
cm³/1000 strokes : 170.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 66.0
tolerance degree : + - 4.0

RATED SPEED
rack travel mm : 11.20
Rated speed rpm : 1195
Tolerance 1/min : + - 5

rack travel mm : 4.00
Rated speed rpm : 1265
Tolerance 1/min : + - 15

rack travel mm : 0.50
Tolerance mm : + - 0.50
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 10.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 7.90

Testing:

Rated speed rpm : 250
rack travel mm : 6.50
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 430
Tolerance 1/min : + - 30

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 12.25
Tolerance mm : + - 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.75
Tolerance mm : + - 0.05

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 300
rack travel mm : 11.00
Tolerance mm : + - 0.10

Pressure hPa : 380
rack travel mm : 11.75
Tolerance mm : + - 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1150
Del. quantity
cm3/1000 strokes : 133.0
Tolerance
cm3/1000 strokes : + - 2.0
Check tolerance
cm3/1000S. : + - 5.0
Spread
Check tolerance
cm3/1000S. : 9.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 215.0
Tolerance
cm3/1000 strokes : + - 15.0
Check tolerance
cm3/1000S. : + - 19.0

LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 6.50
Tolerance mm : + - 0.10
Del. quantity
cm3/1000 strokes : 16.0
Tolerance
cm3/1000 strokes : + - 3.0

Check tolerance
cm3/1000S. : + - 5.5
Spread
Tolerance
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.01.98
Test oil : ISO 4113

Combination No. : 0 402 736 842AA

Injection pump
Pump designation : PES6P120A120RS7281
EP type number : 0 412 726 890

Governor
Governor design. : RQV400...1250PA1060
: -1K
Governor no. : 0 421 815 344

Cust. part No. : 3933296

Customer-spec. information

Customer : CDC
Motor : 6BTA-A
Power KW : 119.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : +- 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : +- 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : +- 1.0

Prestroke mm : 3.60
Tolerance mm : +- 0.05
Check tolerance mm : +- 0.10

Rack travel in mm : 10.50
Tolerance mm : +- 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : +- 0.50
Check tolerance °NW : +- 0.75

Start of delivery blocking

°NW after s.o.d. : 6.00
Tolerance : +- 0.50
Check tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.35

Tolerance mm : \pm 0.05
 Del. quantity cm³/1000 strokes : 153.5
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Spred
 Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0
 Rated speed rpm : 420
 Rack travel in mm : 6.00
 Tolerance mm : \pm 0.20
 Del. quantity cm³/1000 strokes : 15.5
 Tolerance cm³/1000 strokes : \pm 3.0
 Check tolerance cm³/1000S. : \pm 5.0
 Spred
 Tolerance cm³/1000 strokes : 4.0
 Check tolerance cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1313
 guide sleeve travel mm : 7.14
 Tolerance mm : \pm 0.15
 Rated speed rpm : 400
 guide sleeve travel mm : 0.91
 Tolerance mm : \pm 0.20
 Rated speed rpm : 936
 guide sleeve travel mm : 4.64
 Tolerance mm : \pm 0.25
 Rated speed rpm : 640

guide sleeve travel mm : 3.04
 Tolerance mm : \pm 0.25
 Rated speed rpm : 1740
 guide sleeve travel mm : 11.50
 Tolerance mm : \pm 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
 Aneroid pressure hPa : 800
 Del. quantity cm³/1000 strokes : 153.5
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Spred
 Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

CONTROL LEVER

control lever position degree : 120.0
 tolerance degree : \pm 4.0

RATED SPEED
 rack travel mm : 12.30
 Rated speed rpm : 1325
 Tolerance 1/min : \pm 15

rack travel mm : 4.00
 Rated speed rpm : 1475
 Tolerance 1/min : \pm 5

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever position degree : 73.0
 tolerance degree : \pm 4.0

Control lever difference
 Grad : 47.0

tolerance degree : + - 6.0

Setting point w/out bumper spring

Rated speed rpm : 400

CRT mm min. : > 5.80

Testing:

Rated speed rpm : 420
rack travel mm : 6.00
Tolerance mm : + - 0.20

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 13.35
Tolerance mm : + - 0.05

Rated speed rpm : 800
rack travel mm : 12.00
Tolerance mm : + - 0.20

Rated speed rpm : 500
rack travel mm : 11.60
Tolerance mm : + - 0.20

Rated speed rpm : 900
rack travel mm : 12.40
Tolerance mm : + - 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1200

Rated speed rpm : 1250
Pressure hPa : -
rack travel mm : 9.15
Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 1250

Pressure hPa : 310
rack travel mm : 12.30
Tolerance mm : + - 0.30

Pressure hPa : 175
rack travel mm : 10.20
Tolerance mm : + - 0.20

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 280

Check speed 1/min : > 80
Check speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 800
Rated speed rpm : 800
Del. quantity cm3/1000 strokes : 133.0
Tolerance cm3/1000 strokes : + - 3.0
Check tolerance cm3/1000S. : + - 6.0
Spread Tolerance cm3/1000 strokes : 8.0
Check tolerance cm3/1000S. : 12.0

rack travel mm : 11.60
Tolerance mm : + - 0.20

Aneroid pressure

hPa : -
Rated speed rpm : 1250
Del. quantity cm3/1000 strokes : 84.0
Tolerance cm3/1000 strokes : + - 2.0
Check tolerance cm3/1000S. : + - 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.50
Tolerance mm : + - 0.50
Del. quantity cm3/1000 strokes : 155.0
Tolerance cm3/1000 strokes : + - 20.0
Check tolerance cm3/1000S. : + - 25.0

LOW IDLE

Rated speed rpm : 420

Rack travel in mm : 6.00

Tolerance mm : + - 0.20

Del. quantity

cm³/1000 strokes : 15.5

Tolerance

cm³/1000 strokes : + - 3.0

Check tolerance

cm³/1000S. : + - 5.0

Spred

Tolerance

cm³/1000 strokes : 4.0

Check tolerance

cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.02.98
Test oil : ISO 4113

Combination No. : 0 402 736 858

Injection pump
Pump designation : PES6P110A120RS7214
EP type number : 0 412 716 805

Governor
Governor design. : RQV350...1200PA964
: -28K
Governor no. : 0 421 815 428

Cust. part No. : 3282464

Customer-spec. information
Customer : CUMMINS
Motor : 6CTA-A
Power KW : 156.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 120
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008
Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.40
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery blocking

°NW after s.o.d. : 5.50
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 12.35
 Tolerance mm : \pm 0.05
 Del. quantity cm³/1000 strokes : 148.5
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Spred
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0
 Rated speed rpm : 350
 Rack travel in mm : 5.50
 Tolerance mm : \pm 0.10
 Del. quantity cm³/1000 strokes : 30.0
 Tolerance cm³/1000 strokes : \pm 3.0
 Check tolerance cm³/1000S. : \pm 5.0
 Spred
 Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1200
 guide sleeve travel mm : 9.10
 Tolerance mm : \pm 0.10
 Rated speed rpm : 350
 guide sleeve travel mm : 1.80
 Tolerance mm : \pm 0.20
 Rated speed rpm : 450
 guide sleeve travel mm : 3.30
 Tolerance mm : \pm 0.20

Rated speed rpm : 700
 guide sleeve travel mm : 6.10
 Tolerance mm : \pm 0.20

Rated speed rpm : 1400
 guide sleeve travel mm : 10.90
 Tolerance mm : \pm 0.20

GUIDE SLEEVE POSITION

control lever position degree : - 1
 Rated speed rpm : 1330

Rack travel in mm : 16.50
 Tolerance mm : \pm 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
 Aneroid pressure hPa : 1200
 Del. quantity cm³/1000 strokes : 148.5
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Spred
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever position degree : 64.0
 tolerance degree : \pm 4.0

control lever position degree : 119.0
 tolerance degree : \pm 4.0

RATED SPEED
 rack travel mm : 11.30
 Rated speed rpm : 1245
 Tolerance 1/min : \pm 5

rack travel mm : 4.00
 Rated speed rpm : 1385
 Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : + - 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 65.0
tolerance degree : + - 4.0

control lever
position degree : 15.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 275

CRT mm min. : > 7.20

Testing:

Rated speed rpm : 350
rack travel mm : 5.50
Tolerance mm : + - 0.10

Rated speed rpm : 423

TORQUE CONTROL
Rated speed rpm : 1200
rack travel mm : 12.35
Tolerance mm : + - 0.05

Rated speed rpm : 65%
rack travel mm : 11.10
Tolerance mm : + - 0.20

Rated speed rpm : 550
rack travel mm : 11.00
Tolerance mm : + - 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1200
Pressure hPa : 1200
rack travel mm : 12.35
Tolerance mm : + - 0.05

Rated speed rpm : 1200

Pressure hPa : -
rack travel mm : 7.90
Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 1200

Pressure hPa : 575
rack travel mm : 11.40
Tolerance mm : + - 0.20

Pressure hPa : 225
rack travel mm : 8.95
Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 290

Check speed 1/min : > 80
Check speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 650
Del. quantity
cm3/1000 strokes : 154.0
Tolerance
cm3/1000 strokes : + - 3.0
Check tolerance
cm3/1000S. : + - 6.0
Spread
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

rack travel mm : 11.00
Tolerance mm : + - 0.20

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 91.5
Tolerance
cm3/1000 strokes : + - 2.0
Check tolerance
cm3/1000S. : + - 4.0

STARTING FUEL DELIVERY

Set starting CRT at K-cam.

Rated speed rpm : 100
rack travel mm : 11.20
Tolerance mm : + - 0.50
Del. quantity cm³/1000 strokes : 155.0
Tolerance cm³/1000 strokes : + - 20.0
Check tolerance cm³/1000S. : + - 25.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.50
Tolerance mm : + - 0.10
Del. quantity cm³/1000 strokes : 30.0
Tolerance cm³/1000 strokes : + - 3.0
Check tolerance cm³/1000S. : + - 5.0
Spred
Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.02.98
Test oil : ISO 4113

Combination No. : 0 401 816 706

Injection pump
Pump designation : PE6P120A300RS3075
EP type number : 0 411 826 719

Governor
Governor design. :
Governor no. :

Cust. part No. : 846681 P02 v.11.81

Customer-spec. information
Customer : PENTA
Motor : TD120FG

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter : 1.5
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 2.65
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.90
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 244.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 650
Del. quantity

cm³/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 5.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure

hPa : -

Del. quantity

cm³/1000 strokes : 244.0

Tolerance

cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

TORQUE CONTROL

Rated speed rpm : 700

rack travel mm : 11.90

Tolerance mm : + 0.10

LOW IDLE

Rated speed rpm : 650

Del. quantity

cm³/1000 strokes : 25.0

Tolerance

cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 5.0

Spread

Tolerance

cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.02.98
Test oil : ISO 4113

Combination No. : 0 400 466 090

Injection pump
Pump designation : PES6A75D410/3RS1326
EP type number : 0 410 476 977

Governor
Governor design. : RSV325...1400A8C495L
Governor no. : 0 420 232 302

Cust. part No. :

Customer-spec. information
Customer : KHD
Motor : F6L912

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + - 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.0

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + - 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + - 1.0

Prestroke mm : 1.95
Tolerance mm : + - 0.05
Check
tolerance mm : + - 0.10

Rack travel in mm : 10.50
Tolerance mm : + - 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + - 0.50
Check
tolerance °NW : + - 0.75

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 10.25
Tolerance mm : + - 0.05

Del. quantity
cm³/1000 strokes : 44.0

Tolerance
cm³/1000 strokes : + - 0.5

Check tolerance
cm³/1000S. : + - 2.0

Spread

Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm³/1000S. : 3.5

Rated speed rpm : 325

Rack travel in mm : 8.50

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 11.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 4.5

Spread

Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm³/1000S. : 3.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : + 0.35

governor spring
pre-tension
click setting x : 5.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400

Aneroid pressure

hPa : -

Del. quantity
cm³/1000 strokes : 44.0

Tolerance
cm³/1000 strokes : + 0.5

Check tolerance
cm³/1000S. : + 2.0

Spread

Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm³/1000S. : 3.5

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 9.20
Rated speed rpm : 1445
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1485
Tolerance 1/min : + 15

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 1675

rack travel mm : 4.00
Rated speed rpm : 1550
Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 71.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 9.00
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 325
rack travel mm : 8.50
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 680
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 10.25
Tolerance mm : + 0.05

Rated speed rpm : 500
rack travel mm : 11.55
Tolerance mm : + - 0.05

Rated speed rpm : 955
rack travel mm : 10.90
Tolerance mm : + - 0.10

FUEL DELIVERY CHARACTERISTICS

rack travel mm : 10.90
Tolerance mm : + - 0.10

STARTING FUEL DELIVERY

Rated speed rpm : 100

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 8.50
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 4.5

Spred
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 3.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.04.97
Test oil : ISO 4113

Combination No. : E 040 090 300

Injection pump
Pump designation : PES4A95D410RS2837
EP type number :

Governor
Governor design. : RQV300...1400AB1065
: -33L
Governor no. :

Cust. part No. : 026 074 08 02

Customer-spec. information

Customer : MB-NFZ
Motor : OM 364
Power KW : 65.0

TEST BENCH REQUIREMENTS

Inlet line : 2.3

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.25
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 8.85
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 72.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1450

Rack travel in mm : 16.50
Tolerance mm : + - 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 72.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 3.0
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 112.0

RATED SPEED
rack travel mm : 7.85
Rated speed rpm : 1445
Tolerance 1/min : + - 5

rack travel mm : 4.00
Rated speed rpm : 1525
Tolerance 1/min : + - 15

rack travel mm : 0.50
Tolerance mm : + - 0.50
Rated speed rpm : 1670

LOW IDLE

control lever
position degree : 66.0

Setting point w/out bumper spring

Rated speed rpm : 300
rack travel mm : 5.00
Tolerance mm : + - 0.10

Rated speed rpm : 100
CRT mm min. : > 6.50

TORQUE CONTROL
Rated speed rpm : 1400
rack travel mm : 8.85
Tolerance mm : + - 0.05

Rated speed rpm : 500
rack travel mm : 8.90
Tolerance mm : + - 0.10

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 53.5
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.50
Tolerance mm : + - 0.20
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : + - 7.5
Check tolerance
cm³/1000S. : + - 10.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.5
Spread
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.03.98
Test oil : ISO 4113

Combination No. : 0 400 074 779

Injection pump
Pump designation : PES4M55C320RS187
EP type number : 0 410 054 936

Governor
Governor design. : RSF375/2300M56-10
Governor no. : 0 420 021 130

Cust. part No. :

Customer-spec. information

Customer : MB-PKW
Motor : OM601-Abgl. MJ90
Power KW : 53.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holder
assembly : 1 688 901 111

Opening pressure
bar : 148.5
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 1.75
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 21.00
Tolerance mm : + 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Start of delivery blocking

°NW after s.o.d. : 17.00
Tolerance : + 0.20
Check tolerance °NW : + 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 12.35
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 33.5

Tolerance
cm³/1000 strokes : + 0.5

Check tolerance
cm³/1000S. : + 1.5

Spread
Tolerance
cm³/1000 strokes : 2.5

Check tolerance cm³/1000S. : 3.0
 Rated speed rpm : 375
 Rack travel in mm : 6.50
 Tolerance mm : ± 0.10
 Del. quantity cm³/1000 strokes : 6.5
 Tolerance cm³/1000 strokes : ± 0.5
 Spread
 Tolerance cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.50
 Tolerance mm : ± 0.10

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
 Ref. pressure ALDA / ADA hPa : 1100
 Del. quantity cm³/1000 strokes : 33.5
 Tolerance cm³/1000 strokes : ± 0.5
 Check tolerance cm³/1000S. : ± 1.5
 Spread
 Tolerance cm³/1000 strokes : 2.5
 Check tolerance cm³/1000S. : 3.0

RATED SPEED

control lever position degree : 50.0
 Rated speed rpm : 2500
 rack travel mm : 8.50
 Tolerance mm : ± 0.20
 Rated speed rpm : 2950
 rack travel mm : 0.50
 Tolerance mm : ± 0.50

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 900
 CRT mm max. : 1.45

LOW IDLE

control lever position degree : 14.0
 tolerance degree : ± 2.0

Setting point w/out bumper spring
 Rated speed rpm : 375
 rack travel mm : 6.50

SET IDLE AUXILIARY SPRING

Rated speed rpm : 450
 rack travel mm : 4.90
 Tolerance mm : ± 0.10
 rack travel mm : 2.50
 Rated speed rpm : 670
 Tolerance 1/min : ± 50

Load pick-up

Rated speed rpm : 250
 rack travel mm : > 11.00
 Rated speed rpm : 900
 CRT mm max. : 1.45
 rack travel mm : 6.50
 Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 900
 rack travel mm : 12.35
 Tolerance mm : ± 0.05
 Rated speed rpm : 1400
 rack travel mm : 12.05
 Tolerance mm : ± 0.10
 Rated speed rpm : 2300
 rack travel mm : 11.40
 Tolerance mm : ± 0.10

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 900
Ref. pressure :
ALDA / ADA hPa : 950
rack travel mm : -0.10
Tolerance mm : + - 0.10

MEASUREMENT

Rated speed rpm : 900
Ref. pressure :
ALDA / ADA hPa : 900
rack travel mm : -0.60
Tolerance mm : + - 0.10

Ref. pressure :
ALDA / ADA hPa : 750
rack travel mm : -2.00
Tolerance mm : + - 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure :
ALDA / ADA hPa : 1100
Rated speed rpm : 1400
Del. quantity :
cm3/1000 strokes : 33.8
Tolerance :
cm3/1000 strokes : + - 0.8
Check tolerance :
cm3/1000S. : + - 1.8
Spread :
Tolerance :
cm3/1000 strokes : 2.5
Check tolerance :
cm3/1000S. : 3.0

Ref. pressure :
ALDA / ADA hPa : 1100
Rated speed rpm : 2300
Spread :
Del. quantity :
cm3/1000 strokes : 35.0
Tolerance :
cm3/1000 strokes : + - 1.0
Check tolerance :
cm3/1000S. : + - 2.0
Spread :
Tolerance :
cm3/1000 strokes : 2.5
Check tolerance :
cm3/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.10
Del. quantity :
cm3/1000 strokes : 57.0
Tolerance :
cm3/1000 strokes : + - 4.0
Check tolerance :
cm3/1000S. : + - 5.0
Spread :
Tolerance :
cm3/1000 strokes : 6.0
Check tolerance :
cm3/1000S. : 6.0

LOW IDLE

Rated speed rpm : 375
Del. quantity :
cm3/1000 strokes : 7.8
Check tolerance :
cm3/1000S. : + - 2.3
Spread :
Check tolerance :
cm3/1000S. : 1.5

control lever position degree : > 49.00

control lever position degree : < 45.50

SETTING PNEUMATIC FAST IDLE (PLA) POSITION

control lever position degree : 14.0
tolerance degree : + - 2.0

Rated speed rpm : 425

Rack travel in mm : 8.90

Tolerance mm : + - 0.80

Del. quantity :
cm3/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : + - 3.5
Check tolerance
cm³/1000S. : + - 4.5
Vacuum hPa : 400.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 375
Vacuum hPa : 450.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.03.98
Test oil : ISO 4113

Combination No. : 0 400 074 873

Injection pump
Pump designation : PES4M55C320RS184
EP type number : 0 410 054 938

Governor
Governor design. : RSF375/2000M87
Governor no. : 0 420 021 290

Cust. part No. :

Customer-spec. information
Customer : MB-PKW
Motor : OM601-2.3L
Power KW : 60.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holder
assembly : 1 688 901 111

Opening pressure
bar : 148.5
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 2.05
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 21.00
Tolerance mm : + 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
: 0.80
: 1.00

Start of delivery blocking

°NW after s.o.d. : 16.50
Tolerance : + 0.20
Check
tolerance °NW : + 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.70
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 40.5

Tolerance
cm³/1000 strokes : + 0.5

Check tolerance
cm³/1000S. : + 1.5

Spread

Tolerance cm ³ /1000 strokes	: 2.5
Check tolerance cm ³ /1000S.	: 3.0
Rated speed rpm	: 375
Rack travel in mm	: 4.70
Tolerance mm	: + - 0.10
Del. quantity cm ³ /1000 strokes	: 6.5
Tolerance cm ³ /1000 strokes	: + - 0.5
Spred	
Tolerance cm ³ /1000 strokes	: 1.0
 (B) SETTING OF INJECTION PUMP WITH GOVERNOR	
 IDLE STAGE	
Rack travel in mm	: 6.25
Tolerance mm	: + - 0.25
 FULL LOAD DELIVERY AT FULL LOAD STOP	
Rated speed rpm	: 1000
Ref. pressure ALDA / ADA hPa	: 1100
Del. quantity cm ³ /1000 strokes	: 40.5
Tolerance cm ³ /1000 strokes	: + - 0.5
Check tolerance cm ³ /1000S.	: + - 1.5
Spred	
Tolerance cm ³ /1000 strokes	: 2.5
Check tolerance cm ³ /1000S.	: 3.0
 RATED SPEED	
control lever position degree	: 50.0
Rated speed rpm	: 2200
rack travel mm	: 8.80
Tolerance mm	: + - 0.25
Rated speed rpm	: 2500
rack travel mm	: 0.50

Tolerance mm	: + - 0.50
 SET IDLE CONTROL LEVER POSITION	
Rated speed rpm	: 1000
CRT mm max.	: 1.45
 LOW IDLE	
control lever position degree	: 11.0
tolerance degree	: + - 2.0
Setting point w/out bumper spring	
Rated speed rpm	: 375
rack travel mm	: 4.70
 SET IDLE AUXILIARY SPRING	
Rated speed rpm	: 450
rack travel mm	: 3.40
Tolerance mm	: + - 0.10
Load pick-up	
Rated speed rpm	: 250
rack travel mm	: 11.70
Rated speed rpm	: 1000
CRT mm max.	: 1.45
rack travel mm	: 4.70
Rated speed rpm	: 375
 TORQUE CONTROL	
Rated speed rpm	: 1000
rack travel mm	: 12.70
Tolerance mm	: + - 0.05
Rated speed rpm	: 1550
rack travel mm	: 12.40
Tolerance mm	: + - 0.10
Rated speed rpm	: 1950
rack travel mm	: 12.00
Tolerance mm	: + - 0.10
 ADJUSTMENT TEST ADA/ALDA	
SETTING	

Rated speed rpm : 1000
Ref. pressure :
ALDA / ADA hPa : 940
rack travel mm : -0.10
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 1000
Ref. pressure :
ALDA / ADA hPa : 900
rack travel mm : -0.40
Tolerance mm : + 0.10

Ref. pressure :
ALDA / ADA hPa : 750
rack travel mm : -1.50
Tolerance mm : + 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure :
ALDA / ADA hPa : 1100
Rated speed rpm : 1550
Del. quantity :
cm3/1000 strokes : 40.8
Tolerance :
cm3/1000 strokes : + 0.8
Check tolerance :
cm3/1000S. : + 1.8
Spread :
Tolerance :
cm3/1000 strokes : 2.5
Check tolerance :
cm3/1000S. : 3.0

Ref. pressure :
ALDA / ADA hPa : 1100
Rated speed rpm : 1950
Spread :
Del. quantity :
cm3/1000 strokes : 41.5
Tolerance :
cm3/1000 strokes : + 1.0
Check tolerance :
cm3/1000S. : + 2.0
Spread :
Tolerance :
cm3/1000 strokes : 2.5
Check tolerance :
cm3/1000S. : 3.5

HIGH IDLE

Ref. pressure :
ALDA / ADA hPa : 1100

Rated speed rpm : 2200
rack travel mm : 8.80
Tolerance mm : + 0.25
Del. quantity :
cm3/1000 strokes : 30.0
Tolerance :
cm3/1000 strokes : + 2.0
Check tolerance :
cm3/1000S. : + 3.0
Spread :
Tolerance :
cm3/1000 strokes : 2.5
Check tolerance :
cm3/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.60
Tolerance mm : + 1.50
Del. quantity :
cm3/1000 strokes : 59.8
Tolerance :
cm3/1000 strokes : + 4.0
Check tolerance :
cm3/1000S. : + 5.0
Spread :
Tolerance :
cm3/1000 strokes : 6.0
Check tolerance :
cm3/1000S. : 6.0

LOW IDLE

Rated speed rpm : 375
Del. quantity :
cm3/1000 strokes : 7.8
Check tolerance :
cm3/1000S. : + 2.3
Spread :
Check tolerance :
cm3/1000S. : 1.5

control lever position degree : > 45.00

control lever position degree : < 41.50

SETTING PNEUMATIC FAST IDLE (PLA)
(PLA) POSITION

control lever
position degree : 11.0
tolerance degree : + - 2.0

Rated speed rpm : 425

Rack travel in mm : 7.00
Tolerance mm : + - 0.80

Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : + - 3.5
Check tolerance
cm³/1000S. : + - 4.5
Vacuum hPa : 400.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 375
Vacuum hPa : -450.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.11.93
Test oil : ISO 4113

Combination No. : 0 402 646 916X

Injection pump
Pump designation : PE6P120A320LS7836
: -10
EP type number : 0 412 626 854

Governor
Governor design. : RQV300...1050PA797
: -17
Governor no. : 0 421 813 884

Cust. part No. : 0200740302

Customer-spec. information

Customer : MB-NFZ
Motor : OM401 LA
Power KW : 200.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 6- 3- 5- 2- 4-
: 1

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.20
Tolerance mm : + 0.05

Del. quantity cm³/1000 strokes : 202.5
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 4.0
 Spreed
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0
 Rated speed rpm : 300
 Rack travel in mm : 5.60
 Tolerance mm : + - 0.10
 Del. quantity cm³/1000 strokes : 19.0
 Tolerance cm³/1000 strokes : + - 3.0
 Check tolerance cm³/1000S. : + - 6.0
 Spreed
 Tolerance cm³/1000 strokes : 6.0
 Check tolerance cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1107
 guide sleeve travel mm : 8.48
 Tolerance mm : + - 0.20

Rated speed rpm : 300
 guide sleeve travel mm : 1.26
 Tolerance mm : + - 0.15

Rated speed rpm : 1800
 guide sleeve travel mm : 24.23
 Tolerance mm : + - 0.25

Rated speed rpm : 587

guide sleeve travel mm : 4.64
 Tolerance mm : + - 0.25
 Rated speed rpm : 637
 guide sleeve travel mm : 5.18
 Tolerance mm : + - 0.25
 Rated speed rpm : 830
 guide sleeve travel mm : 6.23
 Tolerance mm : + - 0.25
 Rated speed rpm : 1218
 guide sleeve travel mm : 10.00
 Tolerance mm : + - 0.25
 Rated speed rpm : 1330
 guide sleeve travel mm : 11.50
 Tolerance mm : + - 0.50

GUIDE SLEEVE POSITION

control lever position degree : - 1
 Rated speed rpm : 1125
 Rack travel in mm : 16.20
 Tolerance mm : + - 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
 Aneroid pressure hPa : 1400
 Del. quantity cm³/1000 strokes : 202.5
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 4.0
 Spreed
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever position degree : 122.0
 tolerance degree : + - 4.0

RATED SPEED
rack travel mm : 12.20
Rated speed rpm : 1095
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1210
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 84.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : > 7.60

Testing:

Rated speed rpm : 300
rack travel mm : 5.60
Tolerance mm : + 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 13.20
Tolerance mm : + 0.05

Rated speed rpm : 800
rack travel mm : 13.20
Tolerance mm : + 0.05

Rated speed rpm : 600
rack travel mm : 13.20
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400

Pressure hPa : 1400
rack travel mm : 13.20
Tolerance mm : + 0.05

Rated speed rpm : 400
Pressure hPa : -
rack travel mm : 10.25
Tolerance mm : + 0.15

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.25
Tolerance mm : + 0.15

Rated speed rpm : 400

Pressure hPa : 200
Tolerance mm : + 0.10

Pressure hPa : 350
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 240

Check
speed 1/min : > 80
Check
speed 1/min : < 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1400
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 204.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 13.20
Tolerance mm : + 0.05

Aneroid pressure
hPa : 350
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : + - 1.5
Check tolerance
cm³/1000S. : + - 4.5

End of test specification sheet

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : + - 10.0
Check tolerance
cm³/1000S. : + - 14.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 5.60
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.09.93
Test oil : ISO 4113

Combination No. : 0 402 646 921X

Injection pump
Pump designation : PE6P120A320LS7837
: -10
EP type number : 0 412 626 855

Governor
Governor design. : RQ300/1050PA972-3
Governor no. : 0 421 801 565

Cust. part No. : 0200741202

Customer-spec. information

Customer : MB-NFZ
Motor : OM441 LA
Power KW : 250.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 6- 3- 5- 2- 4-
: 1-

Phasing : 0-60-120-180-240
: -300-360
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Del. quantity
cm³/1000 strokes : 245.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance cm³/1000S. : + 4.0

Spred

Tolerance cm³/1000 strokes : 5.0

Check tolerance cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.90
Tolerance mm : + 0.10

Del. quantity cm³/1000 strokes : 19.0

Tolerance cm³/1000 strokes : + 3.0

Check tolerance cm³/1000S. : + 6.0

Spred
Tolerance cm³/1000 strokes : 6.0

Check tolerance cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure

hPa : 1200

Del. quantity cm³/1000 strokes : 245.0

Tolerance cm³/1000 strokes : + 1.0

Check tolerance cm³/1000S. : + 4.0

Spred
Tolerance cm³/1000 strokes : 5.0

Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 98.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 13.90
Rated speed rpm : 1098
Tolerance 1/min : + 8

rack travel mm : 4.00
Rated speed rpm : 1200
Tolerance 1/min : + 15

rack travel mm : 0.75
Tolerance mm : + 0.75
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 7.70

Testing:

Rated speed rpm : 300
rack travel mm : 5.90
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 400
Tolerance 1/min : + 20

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 14.90
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1200
rack travel mm : 15.05
Tolerance mm : + - 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.05
Tolerance mm : + - 0.15

MEASUREMENT

Rated speed rpm : 600
Pressure hPa : 150
rack travel mm : 9.70
Tolerance mm : + - 0.10

Pressure hPa : 550
rack travel mm : 13.45
Tolerance mm : + - 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 236.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 550
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 204.5
Tolerance
cm³/1000 strokes : + - 1.5
Check tolerance
cm³/1000S. : + - 4.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 133.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.10
Tolerance mm : + - 0.20
Del. quantity
cm³/1000 strokes : 75.0
Tolerance
cm³/1000 strokes : + - 15.0
Check tolerance
cm³/1000S. : + - 19.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 5.90
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 04.11.93
Test oil : ISO 4113

Combination No. : 0 402 646 959X

Injection pump
Pump designation : PE6P120A320LS7836
: -10
EP type number : 0 412 626 854

Governor
Governor design. : RQ300/1050PA993-6
Governor no. : 0 421 801 616

Cust. part No. : 0210740402

Customer-spec. information

Customer : MB-NFZ
Motor : OM401 LA
Power KW : 200.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50
Firing order : 6- 3- 5- 2- 4-
: 1

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.20
Tolerance mm : + 0.05

Del. quantity
 cm³/1000 strokes : 202.5
 Tolerance
 cm³/1000 strokes : + - 1.0
 Check tolerance
 cm³/1000S. : + - 4.0
 Spred
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0
 Rated speed rpm : 300
 Rack travel in mm : 5.60
 Tolerance mm : + - 0.10
 Del. quantity
 cm³/1000 strokes : 19.0
 Tolerance
 cm³/1000 strokes : + - 3.0
 Check tolerance
 cm³/1000S. : + - 6.0
 Spred
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : 109
 Rated speed rpm : 600

Rack travel in mm : 20.00
 Tolerance mm : + - 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
 Aneroid pressure
 hPa : 1400
 Del. quantity
 cm³/1000 strokes : 202.5

Tolerance
 cm³/1000 strokes : + - 1.0
 Check tolerance
 cm³/1000S. : + - 4.0
 Spred
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 98.0
 tolerance degree : + - 4.0

RATED SPEED
 rack travel mm : 12.20
 Rated speed rpm : 1098
 Tolerance 1/min : + - 8
 rack travel mm : 4.00
 Rated speed rpm : 1190
 Tolerance 1/min : + - 15
 rack travel mm : 0.75
 Tolerance mm : + - 0.75
 Rated speed rpm : 1300

LOW IDLE

control lever
 position degree : 74.0
 tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
 CRT mm min. : > 7.50

Testing:

Rated speed rpm : 300
 rack travel mm : 5.60
 Tolerance mm : + - 0.10

rack travel mm : 2.00
 Rated speed rpm : 400
 Tolerance 1/min : + - 20

TORQUE CONTROL

Rated speed rpm : 1050

rack travel mm : 13.20
Tolerance mm : + - 0.05

Rated speed rpm : 800
rack travel mm : 13.20
Tolerance mm : + - 0.05

Rated speed rpm : 600
rack travel mm : 13.20
Tolerance mm : + - 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1400
rack travel mm : 13.20
Tolerance mm : + - 0.05

Rated speed rpm : 400
Pressure hPa : -
rack travel mm : 10.25
Tolerance mm : + - 0.15

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.25
Tolerance mm : + - 0.15

Rated speed rpm : 400

Pressure hPa : 200
Tolerance mm : + - 0.10

Pressure hPa : 350
Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check speed 1/min : > 80
Check speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1400

Rated speed rpm : 800
Del. quantity cm3/1000 strokes : 204.0
Tolerance cm3/1000 strokes : + - 2.0
Check tolerance cm3/1000S. : + - 5.0
Spread
Tolerance cm3/1000 strokes : 8.0
Check tolerance cm3/1000S. : 12.0

rack travel mm : 13.20
Tolerance mm : + - 0.05

Aneroid pressure hPa : 350
Rated speed rpm : 400
Del. quantity cm3/1000 strokes : 150.0
Tolerance cm3/1000 strokes : + - 1.5
Check tolerance cm3/1000S. : + - 4.5

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm3/1000 strokes : 130.0
Tolerance cm3/1000 strokes : + - 1.0
Check tolerance cm3/1000S. : + - 4.0
Spread
Tolerance cm3/1000 strokes : 8.0
Check tolerance cm3/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity cm3/1000 strokes : 210.0
Tolerance cm3/1000 strokes : + - 10.0
Check tolerance cm3/1000S. : + - 14.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 5.60
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spred
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 04.11.93
Test oil : ISO 4113

Combination No. : 0 402 646 960X

Injection pump
Pump designation : PE6P120A320LS7836
: -10
EP type number : 0 412 626 854

Governor
Governor design. : RQ300/950PA993-7
Governor no. : 0 421 801 617

Cust. part No. : 0210740702

Customer-spec. information

Customer : MB-NFZ
Motor : OM401 LA
Power KW : 200.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 6- 3- 5- 2- 4-
: 1

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 13.20
Tolerance mm : + 0.05

Del. quantity
 cm³/1000 strokes : 204.5
 Tolerance
 cm³/1000 strokes : + - 1.0
 Check tolerance
 cm³/1000S. : + - 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0
 Rated speed rpm : 300
 Rack travel in mm : 5.60
 Tolerance mm : + - 0.10
 Del. quantity
 cm³/1000 strokes : 19.0
 Tolerance
 cm³/1000 strokes : + - 3.0
 Check tolerance
 cm³/1000S. : + - 6.0
 Spread
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : 109
 Rated speed rpm : 600

Rack travel in mm : 20.00
 Tolerance mm : + - 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950
 Aneroid pressure
 hPa : 1400
 Del. quantity
 cm³/1000 strokes : 204.5

Tolerance
 cm³/1000 strokes : + - 1.0
 Check tolerance
 cm³/1000S. : + - 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 96.0
 tolerance degree : + - 4.0

RATED SPEED
 rack travel mm : 12.20
 Rated speed rpm : 998
 Tolerance 1/min : + - 8
 rack travel mm : 4.00
 Rated speed rpm : 1080
 Tolerance 1/min : + - 15
 rack travel mm : 0.75
 Tolerance mm : + - 0.75
 Rated speed rpm : 1200

LOW IDLE

control lever
 position degree : 74.0
 tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 7.40

Testing:

Rated speed rpm : 300
 rack travel mm : 5.60
 Tolerance mm : + - 0.10
 rack travel mm : 2.00
 Rated speed rpm : 390
 Tolerance 1/min : + - 20

TORQUE CONTROL

Rated speed rpm : 950

rack travel mm : 13.20
Tolerance mm : + - 0.05

Rated speed rpm : 800
rack travel mm : 13.20
Tolerance mm : + - 0.05

Rated speed rpm : 600
rack travel mm : 13.20
Tolerance mm : + - 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1400
rack travel mm : 13.20
Tolerance mm : + - 0.05

Rated speed rpm : 400
Pressure hPa : -
rack travel mm : 10.45
Tolerance mm : + - 0.15

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.45
Tolerance mm : + - 0.15

Rated speed rpm : 400

Pressure hPa : 200
Tolerance mm : + - 0.10

Pressure hPa : 350
Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check speed 1/min : > 80
Check speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1400

Rated speed rpm : 800
Del. quantity cm³/1000 strokes : 204.0

Tolerance cm³/1000 strokes : + - 2.0
Check tolerance cm³/1000S. : + - 5.0

Spread
Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000S. : 12.0

rack travel mm : 13.20
Tolerance mm : + - 0.05

Aneroid pressure hPa : 350
Rated speed rpm : 400
Del. quantity cm³/1000 strokes : 150.0
Tolerance cm³/1000 strokes : + - 1.5
Check tolerance cm³/1000S. : + - 4.5

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 133.0
Tolerance cm³/1000 strokes : + - 1.0
Check tolerance cm³/1000S. : + - 4.0
Spred
Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity cm³/1000 strokes : 210.0
Tolerance cm³/1000 strokes : + - 10.0
Check tolerance cm³/1000S. : + - 14.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 5.60

Tolerance mm : + - 0.10

Del. quantity

cm³/1000 strokes : 19.0

Tolerance

cm³/1000 strokes : + - 3.0

Check tolerance

cm³/1000S. : + - 6.0

Spred

Tolerance

cm³/1000 strokes : 6.0

Check tolerance

cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 20.06.97
Test oil : ISO 4113

Combination No. : 0 402 648 783

Injection pump
Pump designation : PE8P120A320LS7906-1
EP type number : 0 412 628 925

Governor
Governor design. : RQ750PA1326
Governor no. : 0 421 801 815

Cust. part No. : 04222 3938 KY

Customer-spec. information

Customer : KHD
Motor : BF8M1015/C
Power KW : 318.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 033

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 200
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.65
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 8- 7- 2- 6- 5
: - 4- 3- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery blocking

°NW after s.o.d. : 315.00
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.60
 Tolerance mm : \pm 0.05
 Del. quantity cm³/1000 strokes : 365.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Speed
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0
 Rated speed rpm : 300
 Del. quantity cm³/1000 strokes : 20.0
 Tolerance cm³/1000 strokes : \pm 3.0
 Check tolerance cm³/1000S. : \pm 6.0
 Speed
 Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 715
 guide sleeve travel mm : 4.23
 Tolerance mm : \pm 0.15
 Rated speed rpm : 610
 guide sleeve travel mm : 0.72
 Tolerance mm : \pm 0.25
 Rated speed rpm : 900
 guide sleeve travel mm : 14.89
 Tolerance mm : \pm 0.25
 Rated speed rpm : 862

guide sleeve travel mm : 12.00
 Tolerance mm : \pm 0.25
 Rated speed rpm : 930
 guide sleeve travel mm : 13.50
 Tolerance mm : \pm 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
 Aneroid pressure hPa : -
 Del. quantity cm³/1000 strokes : 365.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Speed
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever position degree : 110.0
 tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
 rack travel mm : 11.60
 Rated speed rpm : 780
 Tolerance 1/min : \pm 4
 rack travel mm : 4.50
 rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 900
 Rated speed rpm : 751
 rack travel mm : 11.60
 Rated speed rpm : 781
 Tolerance 1/min : \pm 4
 rack travel mm : 4.50
 rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 900

Rated speed rpm	:	752	Rated speed rpm	:	> 100
rack travel mm	:	11.60	Rated speed rpm	:	< 560
			Check		
Rated speed rpm	:	782	speed 1/min	:	> 80
Tolerance 1/min	:	+/- 4	Check		
rack travel mm	:	4.50	speed 1/min	:	< 580
rack travel mm	:	0.50			
Tolerance mm	:	+/- 0.50			
Rated speed rpm	:	900			
Rated speed rpm	:	753	STARTING FUEL DELIVERY		
rack travel mm	:	11.60			
			Rated speed rpm	:	100
Rated speed rpm	:	783	rack travel mm	:	20.25
Tolerance 1/min	:	+/- 4	Tolerance mm	:	+/- 0.75
rack travel mm	:	4.50	Del. quantity		
			cm ³ /1000 strokes	:	200.0
rack travel mm	:	0.50	Tolerance		
Tolerance mm	:	+/- 0.50	cm ³ /1000 strokes	:	+/- 15.0
Rated speed rpm	:	900	Check tolerance		
			cm ³ /1000S.	:	+/- 19.0
Rated speed rpm	:	754	LOW IDLE		
rack travel mm	:	11.60			
			Rated speed rpm	:	300
Rated speed rpm	:	784	Del. quantity		
Tolerance 1/min	:	+/- 4	cm ³ /1000 strokes	:	20.0
rack travel mm	:	4.50	Tolerance		
			cm ³ /1000 strokes	:	+/- 3.0
rack travel mm	:	0.50	Check tolerance		
Tolerance mm	:	+/- 0.50	cm ³ /1000S.	:	+/- 6.0
Rated speed rpm	:	900	Spread		
			Tolerance		
Rated speed rpm	:	755	cm ³ /1000 strokes	:	8.0
rack travel mm	:	11.60	Check tolerance		
			cm ³ /1000S.	:	12.0
Rated speed rpm	:	785			
Tolerance 1/min	:	+/- 4			
rack travel mm	:	4.50			
rack travel mm	:	0.50	End of test specification sheet		
Tolerance mm	:	+/- 0.50			
Rated speed rpm	:	900			
TORQUE CONTROL					
Rated speed rpm	:	700			
rack travel mm	:	12.60			
Tolerance mm	:	+/- 0.05			
Start interlock					

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 10.12.93
Test oil : ISO 4113

Combination No. : 0 402 648 894A

Injection pump
Pump designation : PE8P120A320LS7835
: -10
EP type number : 0 412 628 853

Governor
Governor design. : RQV300...950PA797
: -18
Governor no. : 0 421 813 886

Cust. part No. : 0200740702

Customer-spec. information

Customer : MB-NFZ
Motor : OM402 LA
Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.55
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.30
Check tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 8

BASIC SETTING

Del. quantity
cm³/1000 strokes : 231.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spred

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.20

Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spred

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1008
guide sleeve
travel mm : 8.52
Tolerance mm : \pm 0.20

Rated speed rpm : 300
guide sleeve
travel mm : 1.50
Tolerance mm : \pm 0.15

Rated speed rpm : 589
guide sleeve
travel mm : 4.97
Tolerance mm : \pm 0.25

Rated speed rpm : 639
guide sleeve
travel mm : 5.51
Tolerance mm : \pm 0.25

Rated speed rpm : 790
guide sleeve
travel mm : 6.48

Tolerance mm : \pm 0.25

Rated speed rpm : 1100

guide sleeve
travel mm : 10.00
Tolerance mm : \pm 0.25

Rated speed rpm : 1210

guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 980

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 231.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spred
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 126.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 13.10
Rated speed rpm : 995
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1085
Tolerance 1/min : \pm 15

rack travel mm : 0.70
Tolerance mm : \pm 0.70

Rated speed rpm : 1200

Tolerance mm : \pm 0.10

LOW IDLE

control lever
position degree : 84.0
tolerance degree : \pm 4.0

Pressure hPa : 550
Tolerance mm : \pm 0.05

Setting point w/out bumper spring

Rated speed rpm : > 100
Rated speed rpm : < 240

Rated speed rpm : 200

Check
speed 1/min : > 80
Check
speed 1/min : < 260

CRT mm min. : > 7.50

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 300
rack travel mm : 6.20
Tolerance mm : \pm 0.10

Aneroid pressure
hPa : 1200
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 217.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 305

rack travel mm : 14.70
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 14.10
Tolerance mm : \pm 0.10

Aneroid pressure
hPa : 550
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5

Rated speed rpm : 800
rack travel mm : 14.70
Tolerance mm : \pm 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 750
Pressure hPa : 1200
rack travel mm : 14.70
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.45
Tolerance mm : \pm 0.15

MEASUREMENT

Rated speed rpm : 750
Pressure hPa : 250
rack travel mm : 11.05

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 215.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 6.20
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.09.93
Test oil : ISO 4113

Combination No. : 0 402 648 894X

Injection pump
Pump designation : PE8P120A320LS7835
: -10
EP type number : 0 412 628 853

Governor
Governor design. : RQV300...950PA797
: -18
Governor no. : 0 421 813 886

Cust. part No. : 0200740702

Customer-spec. information

Customer : MB-NFZ
Motor : OM402 LA
Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5

Tolerance bar : + 1.5
Test lines : 1 680 750 075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 14.70
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 231.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.20
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : + - 3.0

Check tolerance
cm³/1000S. : + - 6.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 980

Rack travel in mm : 16.50
Tolerance mm : + - 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 231.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 126.0
tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 13.10
Rated speed rpm : 995

Tolerance 1/min : + - 5

rack travel mm : 4.00
Rated speed rpm : 1085
Tolerance 1/min : + - 15

rack travel mm : 0.70
Tolerance mm : + - 0.70
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 84.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 7.50

Testing:

Rated speed rpm : 300
rack travel mm : 6.20
Tolerance mm : + - 0.10

Rated speed rpm : 305

TORQUE CONTROL

Dimension a mm : 0.50
Rated speed rpm : 750

rack travel mm : 14.70
Tolerance mm : + - 0.05

Rated speed rpm : 950
rack travel mm : 14.10
Tolerance mm : + - 0.10

Rated speed rpm : 800
rack travel mm : 14.70
Tolerance mm : + - 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1200
rack travel mm : 14.70
Tolerance mm : + - 0.05

Rated speed rpm : 400
Pressure hPa : -
rack travel mm : 10.45
Tolerance mm : + - 0.15

MEASUREMENT

Rated speed rpm : 400

Pressure hPa : 250
rack travel mm : 11.05
Tolerance mm : + - 0.10

Pressure hPa : 550
Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 240

Check speed 1/min : > 80
Check speed 1/min : < 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1200
Rated speed rpm : 950
Del. quantity cm3/1000 strokes : 217.5

Tolerance cm3/1000 strokes : + - 2.0
Check tolerance cm3/1000S. : + - 5.0

Spread
Tolerance cm3/1000 strokes : 8.0
Check tolerance cm3/1000S. : 12.0

rack travel mm : 14.70
Tolerance mm : + - 0.05

Aneroid pressure hPa : 550
Rated speed rpm : 400
Del. quantity cm3/1000 strokes : 190.0
Tolerance cm3/1000 strokes : + - 1.5
Check tolerance cm3/1000S. : + - 4.5

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm3/1000 strokes : 135.0
Tolerance cm3/1000 strokes : + - 1.0
Check tolerance cm3/1000S. : + - 4.0
Spread
Tolerance cm3/1000 strokes : 8.0
Check tolerance cm3/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity cm3/1000 strokes : 215.0
Tolerance cm3/1000 strokes : + - 15.0
Check tolerance cm3/1000S. : + - 19.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 6.20
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 06.09.93
Test oil : ISO 4113

Combination No. : 0 402 648 895X

Injection pump
Pump designation : PE8P120A320LS7835
: -10
EP type number : 0 412 628 853

Governor
Governor design. : RQ300/1050PA972-1
Governor no. : 0 421 801 545

Cust. part No. : 0180742102

Customer-spec. information

Customer : MB-NFZ
Motor : OM402 LA
Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 8

BASIC SETTING

Del. quantity
cm³/1000 strokes : 231.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance cm³/1000S. : + 4.0
 Spred _____
 Tolerance cm³/1000 strokes : 6.0
 Check tolerance cm³/1000S. : 9.0

 Rated speed rpm : 300
 Rack travel in mm : 6.20
 Tolerance mm : + 0.10
 Del. quantity cm³/1000 strokes : 19.0
 Tolerance cm³/1000 strokes : + 3.0
 Check tolerance cm³/1000S. : + 6.0
 Spred
 Tolerance cm³/1000 strokes : 6.0
 Check tolerance cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree : 109
 Rated speed rpm : 600
 Rack travel in mm : 20.00
 Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
 Aneroid pressure hPa : 1200
 Del. quantity cm³/1000 strokes : 231.0
 Tolerance cm³/1000 strokes : + 1.0
 Check tolerance cm³/1000S. : + 4.0
 Spred
 Tolerance cm³/1000 strokes : 6.0

Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever position degree : 99.0
 tolerance degree : + 4.0
 RATED SPEED
 rack travel mm : 13.00
 Rated speed rpm : 1098
 Tolerance 1/min : + 8
 rack travel mm : 4.00
 Rated speed rpm : 1185
 Tolerance 1/min : + 15
 rack travel mm : 0.70
 Tolerance mm : + 0.70
 Rated speed rpm : 1300

LOW IDLE

control lever position degree : 74.0
 tolerance degree : + 4.0
 Setting point w/out bumper spring
 Rated speed rpm : 200
 CRT mm min. : > 7.80
 Testing:
 Rated speed rpm : 300
 rack travel mm : 6.20
 Tolerance mm : + 0.10
 rack travel mm : 2.00
 Rated speed rpm : 400
 Tolerance 1/min : + 20

TORQUE CONTROL

Dimension a mm : 0.50
 Rated speed rpm : 1050
 rack travel mm : 14.00
 Tolerance mm : + 0.10
 Rated speed rpm : 800

rack travel mm : 14.70
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 750
Pressure hPa : 1200
rack travel mm : 14.70
Tolerance mm : + - 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.25
Tolerance mm : + - 0.15

MEASUREMENT

Rated speed rpm : 750
Pressure hPa : 250
rack travel mm : 11.25
Tolerance mm : + - 0.10

Pressure hPa : 550
Tolerance mm : + - 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 215.5
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 14.70
Tolerance mm : + - 0.10

Aneroid pressure
hPa : 550
Rated speed rpm : 400

Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : + - 1.5
Check tolerance
cm³/1000S. : + - 4.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 132.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 55.0
Tolerance
cm³/1000 strokes : + - 15.0
Check tolerance
cm³/1000S. : + - 19.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 6.20
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 06.09.93
Test oil : ISO 4113

Combination No. : 0 402 648 899

Injection pump
Pump designation : PE8P120A320LS7839
: -10
EP type number : 0 412 628 855

Governor
Governor design. : RQ300/950PA971-5
Governor no. : 0 421 801 559

Cust. part No. : 0200743702

Customer-spec. information

Customer : MB-NFZ
Motor : OM442 LA
Power KW : 370.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.05
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 8

CRT ZERO POSITION

Rack travel in mm : 15.20
Tolerance mm : + 0.10

BASIC SETTING

Del. quantity
cm³/1000 strokes : 266.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.30
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : + - 3.0

Check tolerance
cm³/1000S. : + - 6.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance

cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : + - 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550

Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 266.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 104.0
tolerance degree : + - 4.0

RATED SPEED
rack travel mm : 15.50
Rated speed rpm : 998
Tolerance 1/min : + - 8

rack travel mm : 4.00
Rated speed rpm : 1090
Tolerance 1/min : + - 15

rack travel mm : 0.75
Tolerance mm : + - 0.75
Rated speed rpm : 1150

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 7.60

Testing:

Rated speed rpm : 300
rack travel mm : 6.30
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 390
Tolerance 1/min : + - 20

TORQUE CONTROL

Rated speed rpm	:	950
rack travel mm	:	16.50
Tolerance mm	:	+ - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm	:	550
Pressure hPa	:	900

2-stage LDA setting

Rated speed rpm	:	700
Pressure hPa	:	1100
rack travel mm	:	0.20

MEASUREMENT

Rated speed rpm	:	550
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Pressure hPa	:	550
rack travel mm	:	-2.25
Tolerance mm	:	+ - 0.05

Pressure hPa	:	1300
rack travel mm	:	0.55
Tolerance mm	:	+ - 0.05

Pressure hPa	:	250
rack travel mm	:	-5.00
Tolerance mm	:	+ - 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure		
hPa	:	2000
Rated speed rpm	:	950
Del. quantity		
cm ³ /1000 strokes	:	282.5
Tolerance		
cm ³ /1000 strokes	:	+ - 1.5
Check tolerance		
cm ³ /1000S.	:	+ - 4.5
Spread		
Tolerance		
cm ³ /1000 strokes	:	8.0
Check tolerance		
cm ³ /1000S.	:	12.0

Aneroid pressure		
hPa	:	1300
Rated speed rpm	:	700
Del. quantity		
cm ³ /1000 strokes	:	273.0
Tolerance		
cm ³ /1000 strokes	:	+ - 1.5
Check tolerance		
cm ³ /1000S.	:	+ - 4.5

Aneroid pressure		
hPa	:	550
Rated speed rpm	:	400
Del. quantity		
cm ³ /1000 strokes	:	204.5
Tolerance		
cm ³ /1000 strokes	:	+ - 1.5
Check tolerance		
cm ³ /1000S.	:	+ - 4.5

Aneroid pressure		
hPa	:	-
Rated speed rpm	:	500
Del. quantity		
cm ³ /1000 strokes	:	133.0
Tolerance		
cm ³ /1000 strokes	:	+ - 1.0
Check tolerance		
cm ³ /1000S.	:	+ - 4.0
Spred		
Tolerance		
cm ³ /1000 strokes	:	8.0
Check tolerance		
cm ³ /1000S.	:	12.0

STARTING FUEL DELIVERY

Rated speed rpm	:	100
rack travel mm	:	9.30
Tolerance mm	:	+ - 0.20
Del. quantity		
cm ³ /1000 strokes	:	90.0
Tolerance		
cm ³ /1000 strokes	:	+ - 10.0
Check tolerance		
cm ³ /1000S.	:	+ - 14.0

LOW IDLE

Rated speed rpm	:	300
Rack travel in mm	:	6.30

Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spred
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.09.93
Test oil : ISO 4113

Combination No. : 0 402 648 902

Injection pump
Pump designation : PE8P120A320LS7839
: -10
EP type number : 0 412 628 855

Governor
Governor design. : RQ300/1050PA972-5
Governor no. : 0 421 801 564

Cust. part No. : 0200743902

Customer-spec. information

Customer : MB-NFZ
Motor : OM442 LA
Power KW : 370.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.05
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 8

CRT ZERO POSITION

Rack travel in mm : 15.20
Tolerance mm : + 0.10

BASIC SETTING

Del. quantity
cm³/1000 strokes : 266.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.30
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550

Aneroid pressure
hPa : 900

Del. quantity
cm³/1000 strokes : 266.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spred

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 102.0

tolerance degree : + 4.0

RATED SPEED

rack travel mm : 15.30
Rated speed rpm : 1098

Tolerance 1/min : + 8

rack travel mm : 4.00
Rated speed rpm : 1175

Tolerance 1/min : + 15

rack travel mm : 0.75
Tolerance mm : + 0.75

Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 74.0

tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 7.80

Testing:

Rated speed rpm : 300
rack travel mm : 6.30

Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 400

Tolerance 1/min : + 20

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 16.30
Tolerance mm : + - 0.10

Rated speed rpm : 800
rack travel mm : 16.50
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 900

2-stage LDA setting

Rated speed rpm : 700
Pressure hPa : 1100
rack travel mm : 0.20

MEASUREMENT

Rated speed rpm : 550

Pressure hPa : 550
rack travel mm : -2.25
Tolerance mm : + - 0.05

Pressure hPa : 1300
rack travel mm : 0.55
Tolerance mm : + - 0.05

Pressure hPa : 250
rack travel mm : -5.00
Tolerance mm : + - 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 2000
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 272.5
Tolerance
cm³/1000 strokes : + - 1.5
Check tolerance
cm³/1000S. : + - 4.5
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 2000
Rated speed rpm : 800
rack travel mm : 16.50
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 285.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 1300
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 273.5
Tolerance
cm³/1000 strokes : + - 1.5
Check tolerance
cm³/1000S. : + - 4.5

Aneroid pressure
hPa : 550
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 204.5
Tolerance
cm³/1000 strokes : + - 1.5
Check tolerance
cm³/1000S. : + - 4.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 133.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.30
Tolerance mm : + - 0.20

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 6.30
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spred
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.09.93
Test oil : ISO 4113

Combination No. : 0 402 648 907

Injection pump
Pump designation : PE8P120A320LS7839
: -10
EP type number : 0 412 628 855

Governor
Governor design. : RQV300...950PA797
: -22
Governor no. : 0 421 813 909

Cust. part No. : 0200743802

Customer-spec. information

Customer : MB-NFZ
Motor : OM442 LA
Power KW : 370.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5

Tolerance bar : + 1.5
Test Lines : 1 680 750 075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.05
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 8

CRT ZERO POSITION

Rack travel in mm : 15.20
Tolerance mm : + 0.20

BASIC SETTING

Del. quantity
cm³/1000 strokes : 266.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.30
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : + - 3.0

Check tolerance
cm³/1000S. : + - 6.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1050

Rack travel in mm : 16.50
Tolerance mm : + - 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550

Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 266.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 122.0
tolerance degree : + - 4.0

RATED SPEED
rack travel mm : 15.50
Rated speed rpm : 995
Tolerance 1/min : + - 5

rack travel mm : 4.00
Rated speed rpm : 1115
Tolerance 1/min : + - 15

rack travel mm : 0.70
Tolerance mm : + - 0.70
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 86.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 8.00

Testing:

Rated speed rpm : 300
rack travel mm : 6.30
Tolerance mm : + - 0.10

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 16.50
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 900

2-stage LDA setting

Rated speed rpm : 700
Pressure hPa : 1100
rack travel mm : 0.20

MEASUREMENT

Rated speed rpm : 550

Pressure hPa : 550
rack travel mm : -2.25
Tolerance mm : \pm 0.05

Pressure hPa : 1300
rack travel mm : 0.55
Tolerance mm : \pm 0.05

Pressure hPa : 250
rack travel mm : -5.00
Tolerance mm : \pm 0.10

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 240

Check speed 1/min : > 80
Check speed 1/min : < 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 2000
Rated speed rpm : 950
Del. quantity
cm3/1000 strokes : 282.5

Tolerance
cm3/1000 strokes : \pm 1.5
Check tolerance
cm3/1000S. : \pm 4.5
Spread
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

Aneroid pressure

hPa : -
Rated speed rpm : 700
Del. quantity
cm3/1000 strokes : 273.0
Tolerance
cm3/1000 strokes : \pm 1.5
Check tolerance
cm3/1000S. : \pm 4.5

Aneroid pressure

hPa : -
Rated speed rpm : 400
Del. quantity
cm3/1000 strokes : 204.5
Tolerance
cm3/1000 strokes : \pm 1.5
Check tolerance
cm3/1000S. : \pm 4.5

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 133.0
Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 4.0
Spread
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 285.0
Tolerance
cm3/1000 strokes : \pm 10.0
Check tolerance
cm3/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 6.30
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spred
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.09.93
Test oil : ISO 4113

Combination No. : 0 402 648 914X

Injection pump
Pump designation : PE8P120A320LS7835
: -10
EP type number : 0 412 628 853

Governor
Governor design. : RQV300...1050PA797
: -30
Governor no. : 0 421 813 921

Cust. part No. : 0180742202

Customer-spec. information

Customer : MB-NFZ
Motor : OM402 A
Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 8

BASIC SETTING

Del. quantity
cm³/1000 strokes : 231.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance cm³/1000S. : + - 4.0

Spread

Tolerance cm³/1000 strokes : 6.0

Check tolerance cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.20
Tolerance mm : + - 0.10

Del. quantity cm³/1000 strokes : 19.0

Tolerance cm³/1000 strokes : + - 3.0

Check tolerance cm³/1000S. : + - 6.0

Spread

Tolerance cm³/1000 strokes : 6.0

Check tolerance cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1130

Rack travel in mm : 13.90
Tolerance mm : + - 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750

Aneroid pressure

hPa : 1200

Del. quantity cm³/1000 strokes : 231.0

Tolerance cm³/1000 strokes : + - 1.0

Check tolerance cm³/1000S. : + - 4.0

Spread

Tolerance cm³/1000 strokes : 6.0
Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 122.0
tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 13.00
Rated speed rpm : 1095
Tolerance 1/min : + - 5

rack travel mm : 4.00
Rated speed rpm : 1185
Tolerance 1/min : + - 15

rack travel mm : 0.70
Tolerance mm : + - 0.70
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 86.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 7.80

Testing:

Rated speed rpm : 300
rack travel mm : 6.20
Tolerance mm : + - 0.10

Rated speed rpm : 400

TORQUE CONTROL

Dimension a mm : 0.60

Rated speed rpm : 1050
rack travel mm : 14.00
Tolerance mm : + - 0.10

Rated speed rpm : 800

rack travel mm : 14.70
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 750
Pressure hPa : 1200
rack travel mm : 14.70
Tolerance mm : + - 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.25
Tolerance mm : + - 0.15

MEASUREMENT

Rated speed rpm : 750
Pressure hPa : 250
rack travel mm : 11.25
Tolerance mm : + - 0.10
Pressure hPa : 550
Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220
Check speed 1/min : > 80
Check speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 215.5
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 14.70
Tolerance mm : + - 0.10

Aneroid pressure
hPa : 550
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : + - 1.5
Check tolerance
cm³/1000S. : + - 4.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 132.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 215.0
Tolerance
cm³/1000 strokes : + - 15.0
Check tolerance
cm³/1000S. : + - 19.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 6.20
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread

Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.03.94
Test oil : ISO 4113

Combination No. : 0 402 678 820

Injection pump
Pump designation : PE8P120A320LS7823-1
EP type number : 0 412 628 872

Governor
Governor design. : RSV350...1050POA535
: -9
Governor no. : 0 421 833 393

Cust. part No. : 0240742402

Customer-spec. information

Customer : MB-NFZ
Motor : OM442LA
Power KW : 362.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 8

CRT ZERO POSITION

Rack travel in mm : 13.75
Tolerance mm : + 0.05

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 13.75
Tolerance mm : + - 0.05

Del. quantity
cm³/1000 strokes : 235.5

Tolerance
cm³/1000 strokes : + - 1.5

Check tolerance
cm³/1000S. : + - 4.5

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.10
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : + - 3.0

Check tolerance
cm³/1000S. : + - 6.0

Spred

Tolerance
cm³/1000 strokes : 8.0

Check tolerance

cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + - 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600

Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 235.5
Tolerance
cm³/1000 strokes : + - 1.5
Check tolerance
cm³/1000S. : + - 4.5
Spred
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 94.0
tolerance degree : + - 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1070
rack travel mm : 13.40

Rated speed rpm : 1139
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1400

Rated speed rpm : 1071
rack travel mm : 13.40

Rated speed rpm : 1140
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1400

Rated speed rpm : 1072
rack travel mm : 13.40

Rated speed rpm : 1141
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1400

Rated speed rpm : 1073
rack travel mm : 13.40

Rated speed rpm : 1142
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1400

Rated speed rpm : 1078
rack travel mm : 13.40

Rated speed rpm : 1147
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1400

Rated speed rpm : 1079
rack travel mm : 13.40

Rated speed rpm : 1148
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1400

LOW IDLE

control lever position degree : 68.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 350
rack travel mm : 5.10
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 390
Tolerance 1/min : + - 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 13.75
Tolerance mm : + - 0.05

Rated speed rpm : 1030
rack travel mm : 14.50
Tolerance mm : + - 0.10

Rated speed rpm : 950
rack travel mm : 15.00
Tolerance mm : + - 0.10

Rated speed rpm : 800
rack travel mm : 15.40
Tolerance mm : + - 0.10

Rated speed rpm : 700
rack travel mm : 15.45
Tolerance mm : + - 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

2-stage LDA setting

Rated speed rpm : 600
Pressure hPa : 900

MEASUREMENT

Pressure hPa : 350
rack travel mm : -2.40
Tolerance mm : + - 0.05

Pressure hPa : 500
rack travel mm : -0.80
Tolerance mm : + - 0.10

Pressure hPa : 1050
rack travel mm : 0.20
Tolerance mm : + - 0.05

Pressure hPa : 1250
rack travel mm : 1.10
Tolerance mm : + - 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1600
Rated speed rpm : 1030
Del. quantity
cm³/1000 strokes : 254.5
Tolerance
cm³/1000 strokes : + - 1.5
Check tolerance
cm³/1000S. : + - 4.5
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure

hPa : 1600
Rated speed rpm : 800
rack travel mm : 15.00
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 272.5
Tolerance
cm³/1000 strokes : + - 1.5
Check tolerance
cm³/1000S. : + - 4.5
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 142.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 250.0
Tolerance
cm³/1000 strokes : + - 10.0
Check tolerance
cm³/1000S. : + - 14.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.10
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 06.03.98
Test oil : ISO 4113

Combination No. : 0 402 678 835

Injection pump
Pump designation : PE8P120A320LS7844
EP type number : 0 412 628 860

Governor
Governor design. : RSV350...1050POA673
Governor no. : 0 421 833 590

Cust. part No. : 0270746802

Customer-spec. information

Customer : MB-NFZ
Motor : OM442LA
Power KW : 370.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 200
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.05
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.10
Check
tolerance °NW : + 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1030

Rack travel in mm : 15.30
Tolerance mm : + 0.05

Del. quantity _____
 cm³/1000 strokes : 272.0
 Tolerance _____
 cm³/1000 strokes : + - 1.0
 Check tolerance _____
 cm³/1000S. : + - 4.0
 Spread _____
 Tolerance _____
 cm³/1000 strokes : 5.0
 Check tolerance _____
 cm³/1000S. : 9.0

 Rated speed rpm : 350
 Rack travel in mm : 5.00
 Tolerance mm : + - 0.10
 Del. quantity _____
 cm³/1000 strokes : 19.0
 Tolerance _____
 cm³/1000 strokes : + - 3.0
 Check tolerance _____
 cm³/1000S. : + - 6.0
 Spread _____
 Tolerance _____
 cm³/1000 strokes : 8.0
 Check tolerance _____
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800

Rack travel in mm : 0.50
 Tolerance mm : + - 0.20

governor spring
 pre-tension
 click setting x : 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1030

Aneroid pressure _____
 hPa : 1200
 Del. quantity _____
 cm³/1000 strokes : 272.0
 Tolerance _____
 cm³/1000 strokes : + - 1.0
 Check tolerance _____
 cm³/1000S. : + - 4.0
 Spread _____
 Tolerance _____
 cm³/1000 strokes : 5.0
 Check tolerance _____
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 96.0
 tolerance degree : + - 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1070
 Tolerance 1/min : + - 1
 rack travel mm : 14.30
 Rated speed rpm : 1150
 Tolerance 1/min : + - 4
 rack travel mm : 4.00
 rack travel mm : 0.85
 Tolerance mm : + - 0.55
 Rated speed rpm : 1250

Rated speed rpm : 1072
 Tolerance 1/min : + - 1
 rack travel mm : 14.30

Rated speed rpm : 1152
 Tolerance 1/min : + - 4
 rack travel mm : 4.00
 rack travel mm : 0.85
 Tolerance mm : + - 0.55
 Rated speed rpm : 1250

Rated speed rpm : 1074
 Tolerance 1/min : + - 1
 rack travel mm : 14.30

Rated speed rpm : 1154
 Tolerance 1/min : + - 4
 rack travel mm : 4.00
 rack travel mm : 0.85

Tolerance mm : + 0.55
Rated speed rpm : 1250

Rated speed rpm : 1076
Tolerance 1/min : + 1
rack travel mm : 14.30

Rated speed rpm : 1156
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1250

Rated speed rpm : 1078
Tolerance 1/min : + 1
rack travel mm : 14.30

Rated speed rpm : 1158
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1250

Rated speed rpm : 1080
Tolerance 1/min : + 1
rack travel mm : 14.30

Rated speed rpm : 1160
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 70.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 350
rack travel mm : 5.00

F07

Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 385
Tolerance 1/min : + 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1030
rack travel mm : 15.30
Tolerance mm : + 0.05

Rated speed rpm : 800
rack travel mm : 15.30
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

CRT ZERO POSITION

Rack travel in mm : 8.40
Tolerance mm : + 0.15

Rated speed rpm : 500
Pressure hPa : -

MEASUREMENT

Pressure hPa : 180
rack travel mm : 0.40
Tolerance mm : + 0.05

Pressure hPa : 670
rack travel mm : 5.00
Tolerance mm : + 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 277.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spread

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 140.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 270.0
Tolerance
cm³/1000 strokes : + - 15.0
Check tolerance
cm³/1000S. : + - 19.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.00
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.02.98
Test oil : ISO 4113

Combination No. : 0 402 678 836

Injection pump
Pump designation : PE8P120A320LS7844
EP type number : 0 412 628 860

Governor
Governor design. : RSV550...1050POA672
Governor no. : 0 421 833 591

Cust. part No. : 0270746402

Customer-spec. information

Customer : MB-NFZ
Motor : OM442LA
Power KW : 370.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 225
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.05
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.00
Tolerance mm : + 1.00

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.10
Check
tolerance °NW : + 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1030

Rack travel in mm : 15.60
 Tolerance mm : + - 0.05
 Del. quantity cm³/1000 strokes : 270.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 4.0
 Spreed
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0

Rated speed rpm : 550
 Rack travel in mm : 4.00
 Tolerance mm : + - 0.10
 Del. quantity cm³/1000 strokes : 19.0
 Tolerance cm³/1000 strokes : + - 3.0
 Check tolerance cm³/1000S. : + - 6.0
 Spreed
 Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree : - 3
 Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : + - 0.20
 governor spring pre-tension click setting x : 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1030
 Aneroid pressure hPa : 1200
 Del. quantity cm³/1000 strokes : 270.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 4.0
 Spreed
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever position degree : 88.0
 tolerance degree : + - 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1070
 Tolerance 1/min : + - 1
 rack travel mm : 14.60
 Rated speed rpm : 1110
 Tolerance 1/min : + - 4
 rack travel mm : 4.00
 rack travel mm : 0.85
 Tolerance mm : + - 0.55
 Rated speed rpm : 1200

Rated speed rpm : 1071
 Tolerance 1/min : + - 1
 rack travel mm : 14.60
 Rated speed rpm : 1111
 Tolerance 1/min : + - 4
 rack travel mm : 4.00
 rack travel mm : 0.85
 Tolerance mm : + - 0.55
 Rated speed rpm : 1200
 Rated speed rpm : 1072
 Tolerance 1/min : + - 1
 rack travel mm : 14.60

Rated speed rpm : 1112
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1200

Rated speed rpm : 1073
Tolerance 1/min : + - 1
rack travel mm : 14.60

Rated speed rpm : 1113
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1200

Rated speed rpm : 1074
Tolerance 1/min : + - 1
rack travel mm : 14.60

Rated speed rpm : 1114
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1200

Rated speed rpm : 1175
Tolerance 1/min : + - 1
rack travel mm : 14.60

Rated speed rpm : 1115
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1200

LOW IDLE

control lever position degree : 70.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 550
rack travel mm : 4.00
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 570
Tolerance 1/min : + - 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1030
rack travel mm : 15.60
Tolerance mm : + - 0.05

Rated speed rpm : 600
rack travel mm : 15.60
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

CRT ZERO POSITION

Rack travel in mm : 9.75
Tolerance mm : + - 0.15

Rated speed rpm : 450
Pressure hPa : 1200
rack travel mm : 15.60
Tolerance mm : + - 0.10

Rated speed rpm : 450
Pressure hPa : -
rack travel mm : 9.75
Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 450
Pressure hPa : 600
rack travel mm : 12.20
Tolerance mm : + - 0.15

Pressure hPa : 800
rack travel mm : 14.10
Tolerance mm : + - 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 287.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 162.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 260.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 550

Rack travel in mm : 4.00
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.11.97
Test oil : ISO 4113

Combination No. : 0 402 678 839

Injection pump
Pump designation : PE8P120A320LS7912
EP type number : 0 412 628 927

Governor
Governer design. : RSV550...1050P0A681
Governer no. : 0 421 833 600

Cust. part No. : 028 074 2802

Customer-spec. information

Customer : MB-NFZ
Motor : OM402LA,Euro
Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 120
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.55
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.50
Check tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1030

Rack travel in mm : 13.70
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 208.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 550

Rack travel in mm : 4.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spred

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1030

Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 208.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spred
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 88.0
tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1070
Tolerance 1/min : \pm 1
rack travel mm : 12.70

Rated speed rpm : 1110
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

Rated speed rpm : 1071
Tolerance 1/min : \pm 1
rack travel mm : 12.70

Rated speed rpm : 1111
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

Rated speed rpm : 1072
Tolerance 1/min : \pm 1
rack travel mm : 12.70

Rated speed rpm : 1112
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85

Tolerance mm : + - 0.55
Rated speed rpm : 1300

Rated speed rpm : 1073
Tolerance 1/min : + - 1
rack travel mm : 12.70

Rated speed rpm : 1113
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1300

Rated speed rpm : 1074
Tolerance 1/min : + - 1
rack travel mm : 12.70

Rated speed rpm : 1114
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1300

Rated speed rpm : 1075
Tolerance 1/min : + - 1
rack travel mm : 12.70

Rated speed rpm : 1115
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 71.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 550
rack travel mm : 4.10

Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 575
Tolerance 1/min : + - 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1030
rack travel mm : 13.70
Tolerance mm : + - 0.05

Rated speed rpm : 600
rack travel mm : 14.70
Tolerance mm : + - 0.10

Rated speed rpm : 900
rack travel mm : 14.20
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 450
Pressure hPa : 1000
rack travel mm : 14.70
Tolerance mm : + - 0.15

Rated speed rpm : 450
Pressure hPa : -
rack travel mm : 12.40
Tolerance mm : + - 0.15

MEASUREMENT

Rated speed rpm : 450
Pressure hPa : 750
rack travel mm : 14.00
Tolerance mm : + - 0.15

Pressure hPa : 650
rack travel mm : 13.40
Tolerance mm : + - 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000

Rated speed rpm : 600
Del. quantity cm³/1000 strokes : 240.0
Tolerance cm³/1000 strokes : + - 2.0
Check tolerance cm³/1000S. : + - 5.0
Spred
Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000S. : 12.0

Rack travel mm : 14.20
Tolerance mm : + - 0.10

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 170.0
Tolerance cm³/1000 strokes : + - 1.0
Check tolerance cm³/1000S. : + - 4.0
Spred
Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity cm³/1000 strokes : 220.0
Tolerance cm³/1000 strokes : + - 15.0
Check tolerance cm³/1000S. : + - 19.0

LOW IDLE

Rated speed rpm : 550
Rack travel in mm : 4.10
Tolerance mm : + - 0.10
Del. quantity cm³/1000 strokes : 18.0
Tolerance cm³/1000 strokes : + - 3.0
Check tolerance cm³/1000S. : + - 6.0

Spred
Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 20.10.94
Test oil : ISO 4113

Combination No. : 0 402 744 800

Injection pump
Pump designation : PES4P120A320RS7312
EP type number : 0 412 724 800

Governor
Governor design. : RQV400...1200PA1115
: -1K
Governor no. : 0 421 815 406

Cust. part No. : 51.11103-7295

Customer-spec. information

Customer : MAN
Motor : D0824LFL02
Power KW : 116.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 15.00
Tolerance mm : + 0.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

Start of delivery mark

°NW after s.o.d. : 0.50

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 15.00
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 214.0

Tolerance
cm³/1000 strokes : +— 1.0

Check tolerance
cm³/1000S. : +— 4.0

Spred

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 400

Rack travel in mm : 5.00
Tolerance mm : +— 0.10

Del. quantity
cm³/1000 strokes : 30.0
Tolerance

cm³/1000 strokes : +— 3.0
Check tolerance

cm³/1000S. : +— 6.0
Spred

Tolerance
cm³/1000 strokes : 8.0
Check tolerance

cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1256
guide sleeve

travel mm : 10.49
Tolerance mm : +— 0.25

Rated speed rpm : 400
guide sleeve

travel mm : 3.06
Tolerance mm : +— 0.25

Rated speed rpm : 869
guide sleeve

travel mm : 7.12
Tolerance mm : +— 0.25

Rated speed rpm : 380
guide sleeve

travel mm : 2.52
Tolerance mm : +— 0.25

Rated speed rpm : 430
guide sleeve

travel mm : 3.23
Tolerance mm : +— 0.25

Rated speed rpm : 530
guide sleeve

travel mm : 4.25
Tolerance mm : +— 0.25

Rated speed rpm : 1500
guide sleeve

travel mm : 13.50
Tolerance mm : +— 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1370

Rack travel in mm : 9.00
Tolerance mm : +— 1.30

CONTROL LEVER

control lever
position degree : 121.0
tolerance degree : +— 4.0

RATED SPEED
rack travel mm : 14.00
Rated speed rpm : 1250
Tolerance 1/min : +— 5

rack travel mm : 4.00
Rated speed rpm : 1385
Tolerance 1/min : +— 15

rack travel mm : 0.50
Tolerance mm : +— 0.50
Rated speed rpm : 1520

LOW IDLE

control lever
position degree : 77.0
tolerance degree : +— 4.0

Setting point w/out bumper spring

Rated speed rpm : 325

CRT mm min. : > 7.50

Testing:

Rated speed rpm : 400
rack travel mm : 5.00
Tolerance mm : + - 0.10

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 15.00
Tolerance mm : + - 0.05

Rated speed rpm : 1000
rack travel mm : 14.80
Tolerance mm : + - 0.10

Rated speed rpm : 800
rack travel mm : 13.70
Tolerance mm : + - 0.10

Rated speed rpm : 750
rack travel mm : 7.50
Tolerance mm : + - 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1150
Pressure hPa : 1200
rack travel mm : 15.00
Tolerance mm : + - 0.05

Rated speed rpm : 1150
Pressure hPa : -
rack travel mm : 9.30
Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 1150

Pressure hPa : 600
rack travel mm : 13.45
Tolerance mm : + - 0.15

Pressure hPa : 120
rack travel mm : 9.65
Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : < 280

Rated speed rpm : > 320

Check
speed 1/min : < 260
Check
speed 1/min : > 340

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1000
Del. quantity
cm3/1000 strokes : 216.0
Tolerance
cm3/1000 strokes : + - 3.0
Check tolerance
cm3/1000S. : + - 6.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
rack travel mm : 13.70
Tolerance mm : + - 0.10
Del. quantity
cm3/1000 strokes : 204.0
Tolerance
cm3/1000 strokes : + - 3.0
Check tolerance
cm3/1000S. : + - 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm3/1000 strokes : 92.0
Tolerance
cm3/1000 strokes : + - 5.0
Check tolerance
cm3/1000S. : + - 8.0
Spread
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 117.0
Tolerance
cm3/1000 strokes : + - 1.0
Check tolerance
cm3/1000S. : + - 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 60.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.70
Tolerance mm : + - 0.30
Del. quantity
cm³/1000 strokes : 98.0
Tolerance
cm³/1000 strokes : + - 15.0
Check tolerance
cm³/1000S. : + - 19.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 5.00
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spred
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 31.03.98
Test oil : ISO 4113

Combination No. : 0 402 646 672

Injection pump
Pump designation : PE6P120A320RS7421
EP type number : 0 412 626 956

Governor
Governor design. : RQV275...1150PA1298K
Governor no. : 0 421 815 525

Cust. part No. : 1316185/1

Customer-spec. information

Customer : DAF
Motor : PF 183 M
Power KW : 183.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 150
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 15.0
Tolerance bar : + 1.0

Prestroke mm : 4.85
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.10
Check tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 11.35
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 206.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 4.90
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 16.0

Tolerance
cm³/1000 strokes : + - 3.0

Check tolerance
cm³/1000S. : + - 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1200

guide sleeve
travel mm : 10.06
Tolerance mm : + - 0.15

Rated speed rpm : 275

guide sleeve
travel mm : 1.71
Tolerance mm : + - 0.20

Rated speed rpm : 811

guide sleeve
travel mm : 6.79
Tolerance mm : + - 0.25

Rated speed rpm : 450

guide sleeve
travel mm : 3.85
Tolerance mm : + - 0.25

Rated speed rpm : 1480
guide sleeve
travel mm : 13.50
Tolerance mm : + - 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1343

Rack travel in mm : 9.80
Tolerance mm : + - 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 206.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 10.05
Rated speed rpm : 1190

Tolerance 1/min : + - 5

Check
speed 1/min : + - 10

rack travel mm : 4.00

Rated speed rpm : 1285
Tolerance 1/min : + - 15

Check
speed 1/min : + - 20

rack travel mm : 0.70

Tolerance mm : \pm 0.70
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 72.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

CRT mm min. : > 7.00

Testing:

Rated speed rpm : 275
rack travel mm : 4.90
Tolerance mm : \pm 0.10

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 11.35
Tolerance mm : \pm 0.05

Rated speed rpm : 1130
rack travel mm : 11.05
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 11.15
Tolerance mm : \pm 0.10

Rated speed rpm : 800
rack travel mm : 11.15
Tolerance mm : \pm 0.10

Rated speed rpm : 650
rack travel mm : 10.45
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 9.55
Tolerance mm : \pm 0.10

Rated speed rpm : 1150
rack travel mm : 11.05
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 875
Pressure hPa : 1500
rack travel mm : 11.35
Tolerance mm : \pm 0.10

Rated speed rpm : 875
Pressure hPa : -
rack travel mm : 8.10
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 875
Pressure hPa : 400
rack travel mm : 10.50
Tolerance mm : \pm 0.05

Pressure hPa : 200
rack travel mm : 9.00
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1130
Del. quantity
cm³/1000 strokes : 184.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 11.15
Tolerance mm : \pm 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 138.0

Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0
Spred
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 4.90
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spred
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.03.98
Test oil : ISO 4113

Combination No. : 0 402 646 887AB

Injection pump
Pump designation : PE6P120A720RS7188
: -10
EP type number : 0 412 626 924

Governor
Governor design. : RQV200...950PA725-7
Governor no. : 0 421 813 803

Cust. part No. : 1333122-1

Customer-spec. information
Customer : SCANIA
Motor : DSC 11 23

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 190
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm	:	13.85	Tolerance mm	:	+ - 0.30
Tolerance mm	:	+ - 0.05	Rated speed rpm	:	350
Del. quantity cm ³ /1000 strokes	:	252.0	guide sleeve travel mm	:	2.70
Tolerance cm ³ /1000 strokes	:	+ - 1.0	Tolerance mm	:	+ - 0.30
Check tolerance cm ³ /1000S.	:	+ - 4.0	Rated speed rpm	:	1125
Spred			guide sleeve travel mm	:	9.50
Tolerance cm ³ /1000 strokes	:	8.0	Tolerance mm	:	+ - 0.20
Check tolerance cm ³ /1000S.	:	12.0			
Rated speed rpm	:	250	GUIDE SLEEVE POSITION		
Rack travel in mm	:	4.70	control lever position degree	:	- 1
Tolerance mm	:	+ - 0.10	Rated speed rpm	:	1150
Del. quantity cm ³ /1000 strokes	:	16.0	Rack travel in mm	:	9.50
Tolerance cm ³ /1000 strokes	:	+ - 3.0	Tolerance mm	:	+ - 2.50
Check tolerance cm ³ /1000S.	:	+ - 6.0			
Spred			FULL LOAD DELIVERY AT FULL LOAD STOP		
Tolerance cm ³ /1000 strokes	:	4.0	Rated speed rpm	:	700
Check tolerance cm ³ /1000S.	:	8.0	Aneroid pressure hPa	:	-
(B) SETTING OF INJECTION PUMP WITH GOVERNOR			Del. quantity cm ³ /1000 strokes	:	252.0
GUIDE SLEEVE TRAVEL			Tolerance cm ³ /1000 strokes	:	+ - 1.0
Rated speed rpm	:	1045	Check tolerance cm ³ /1000S.	:	+ - 4.0
guide sleeve travel mm	:	8.50	Spred		
Tolerance mm	:	+ - 0.10	Tolerance cm ³ /1000 strokes	:	8.0
Rated speed rpm	:	225	Check tolerance cm ³ /1000S.	:	12.0
guide sleeve travel mm	:	1.40			
Tolerance mm	:	+ - 0.20			
Rated speed rpm	:	650	CONTROL LEVER		
guide sleeve travel mm	:	4.80	control lever position degree	:	60.0
			tolerance degree	:	+ - 4.0
			control lever position degree	:	114.0
			tolerance degree	:	+ - 4.0
			RATED SPEED		
			rack travel mm	:	12.80
			Rated speed rpm	:	995
			Tolerance 1/min	:	+ - 5
			Check speed 1/min	:	+ - 10

rack travel mm : 4.00
Rated speed rpm : 1125
Tolerance 1/min : + - 15
Check speed 1/min : + - 20

rack travel mm : 0.50
Tolerance mm : + - 0.50
Rated speed rpm : 1250

LOW IDLE

control lever position degree : 64.0
tolerance degree : + - 4.0

control lever position degree : 10.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. : > 6.00

Testing:

Rated speed rpm : 250
rack travel mm : 4.70
Tolerance mm : + - 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.85
Tolerance mm : + - 0.05

Rated speed rpm : 950
rack travel mm : 13.85
Tolerance mm : + - 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.85
Tolerance mm : + - 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.60
Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 270

rack travel mm : 10.90
Tolerance mm : + - 0.15

Pressure hPa : 440
rack travel mm : 11.90
Tolerance mm : + - 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : -
Rated speed rpm : 950
Del. quantity cm³/1000 strokes : 237.0
Tolerance cm³/1000 strokes : + - 4.0
Check tolerance cm³/1000S. : + - 6.0

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 128.0
Tolerance cm³/1000 strokes : + - 1.0
Check tolerance cm³/1000S. : + - 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.60
Tolerance mm : + - 0.20
Del. quantity cm³/1000 strokes : 136.0
Tolerance cm³/1000 strokes : + - 20.0
Check tolerance cm³/1000S. : + - 24.0

LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 4.70

Tolerance mm : + 0.10

Del. quantity

cm³/1000 strokes : 16.0

Tolerance

cm³/1000 strokes : + 3.0

Check tolerance

cm³/1000S. : + 6.0

Spred

Tolerance

cm³/1000 strokes : 4.0

Check tolerance

cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 27.03.98
Test oil : ISO 4113

Combination No. : 0 402 646 937AB

Injection pump
Pump designation : PE6P120A720RS7188
: -100
EP type number : 0 412 626 925

Governor
Governor design. : RQV200...950PA725-7
Governor no. : 0 421 813 803

Cust. part No. : 1333121-1

Customer-spec. information
Customer : SCANIA
Motor : DSC11 21

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008
Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.75
Tolerance mm : + 0.05

Del. quantity cm³/1000 strokes : 220.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 4.0
 Spred
 Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0
 Rated speed rpm : 250
 Rack travel in mm : 4.70
 Tolerance mm : + - 0.10
 Del. quantity cm³/1000 strokes : 16.0
 Tolerance cm³/1000 strokes : + - 3.0
 Check tolerance cm³/1000S. : + - 6.0
 Spred
 Tolerance cm³/1000 strokes : 4.0
 Check tolerance cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1045
 guide sleeve travel mm : 8.50
 Tolerance mm : + - 0.10
 Rated speed rpm : 225
 guide sleeve travel mm : 1.40
 Tolerance mm : + - 0.20
 Rated speed rpm : 650
 guide sleeve travel mm : 4.80
 Tolerance mm : + - 0.30
 Rated speed rpm : 350

guide sleeve travel mm : 2.70
 Tolerance mm : + - 0.30
 Rated speed rpm : 1125
 guide sleeve travel mm : 9.50
 Tolerance mm : + - 0.20

GUIDE SLEEVE POSITION

control lever position degree : - 1
 Rated speed rpm : 1150
 Rack travel in mm : 9.50
 Tolerance mm : + - 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
 Aneroid pressure hPa : -
 Del. quantity cm³/1000 strokes : 220.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 4.0
 Spred
 Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

CONTROL LEVER

control lever position degree : 60.0
 tolerance degree : + - 4.0
 control lever position degree : 112.0
 tolerance degree : + - 4.0
 RATED SPEED
 rack travel mm : 11.70
 Rated speed rpm : 995
 Tolerance 1/min : + - 5
 Check speed 1/min : + - 10
 rack travel mm : 4.00
 Rated speed rpm : 1120
 Tolerance 1/min : + - 15

Check
speed 1/min : + - 20

rack travel mm : 0.50
Tolerance mm : + - 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 62.0
tolerance degree : + - 4.0

control lever
position degree : 10.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. : > 6.07

Testing:

Rated speed rpm : 250
rack travel mm : 4.70
Tolerance mm : + - 0.10

Rated speed rpm : 275

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.75
Tolerance mm : + - 0.05

Rated speed rpm : 950
rack travel mm : 12.75
Tolerance mm : + - 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.75
Tolerance mm : + - 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.60

Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 270
rack travel mm : 11.05
Tolerance mm : + - 0.15

Pressure hPa : 440
rack travel mm : 12.00
Tolerance mm : + - 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : -
Rated speed rpm : 950
Del. quantity cm³/1000 strokes : 209.0
Tolerance cm³/1000 strokes : + - 4.0
Check tolerance cm³/1000S. : + - 6.0

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 120.0
Tolerance cm³/1000 strokes : + - 1.0
Check tolerance cm³/1000S. : + - 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.60
Tolerance mm : + - 0.20
Del. quantity cm³/1000 strokes : 134.0
Tolerance cm³/1000 strokes : + - 15.0
Check tolerance cm³/1000S. : + - 19.0

LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 4.70
Tolerance mm : + 0.10
Det. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spred
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.03.98
Test oil : ISO 4113

Combination No. : 0 402 946 020

Injection pump
Pump designation : PES6P120A320RS8038
EP type number : 0 412 926 025

Governor
Governor design. : RQV250...1000PA1239
: -2
Governor no. : 0 421 814 168

Cust. part No. : 1369545

Customer-spec. information

Customer : SCANIA
Motor : DSC 9.11

TEST BENCH REQUIREMENTS

Inlet Line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 105
Tolerance l/h : + 15.0

Test nozzle holder
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.00
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery blocking

Tolerance : + 0.50
Check tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.30
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 277.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 9.0

Spred

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 250

Rack travel in mm : 7.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 45.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spred

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1057
guide sleeve
travel mm : 7.89
Tolerance mm : \pm 0.15

Rated speed rpm : 250
guide sleeve
travel mm : 1.33
Tolerance mm : \pm 0.20

Rated speed rpm : 748
guide sleeve
travel mm : 6.17
Tolerance mm : \pm 0.25

Rated speed rpm : 470

guide sleeve
travel mm : 4.09
Tolerance mm : \pm 0.25

Rated speed rpm : 1470

guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 277.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 9.0

Spred

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 56.0

tolerance degree : \pm 4.0

control lever
position degree : 119.0

tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.30

Rated speed rpm : 1045

Tolerance 1/min : \pm 5

Check
speed 1/min : \pm 10

rack travel mm : 4.00

Rated speed rpm : 1225

Tolerance 1/min : \pm 15

Check
speed 1/min : \pm 20

rack travel mm : 0.50

Tolerance mm : \pm 0.50

Rated speed rpm : 1350

LOW IDLE

control lever

position degree : 89.0
tolerance degree : \pm 4.0

control lever

position degree : 24.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. : > 9.80

Testing:

Rated speed rpm : 250
rack travel mm : 7.70
Tolerance mm : \pm 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 12.30
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 12.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.30
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.80
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 330
rack travel mm : 11.20

Tolerance mm : \pm 0.15

Pressure hPa : 600
rack travel mm : 11.90
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : < 190
Rated speed rpm : > 150

Check speed 1/min : < 210
Check speed 1/min : > 130

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1500
Rated speed rpm : 1000
Del. quantity cm³/1000 strokes : 278.0
Tolerance cm³/1000 strokes : \pm 4.0
Check tolerance cm³/1000S. : \pm 9.0

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 210.0
Tolerance cm³/1000 strokes : \pm 1.0
Check tolerance cm³/1000S. : \pm 7.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity cm³/1000 strokes : 260.0
Tolerance cm³/1000 strokes : \pm 20.0
Check tolerance cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 7.70

Tolerance mm : + - 0.10

Del. quantity

cm³/1000 strokes : 45.0

Tolerance

cm³/1000 strokes : + - 3.0

Check tolerance

cm³/1000S. : + - 6.0

Spred

Tolerance

cm³/1000 strokes : 4.0

Check tolerance

cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 28.10.94
Test oil : ISO 4113

Combination No. : 0 401 646 002

Injection pump
Pump designation : PES6R120/720LS1505
EP type number : 0 411 626 004

Governor
Governor design. : RQV300...1100R3K
Governor no. : 0 421 415 004

Cust. part No. : 51.11103-7234

Customer-spec. information

Customer : MAN
Motor : D2866LE401
Power KW : 440.0

TEST BENCH REQUIREMENTS

Inlet Line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BASIC SETTING

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.03.98
Test oil : ISO 4113

Combination No. : F 000 409 208

Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025

Governor
Governor design. : RSV400...1100A2C969R
Governor no. : F 000 420 702

Cust. part No. : 3353232

Customer-spec. information

Customer : CUMMINS
Motor : 6 CT
Power KW : 120.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery blocking

°NW after s.o.d. : 10.00
Tolerance : + 0.10
Check tolerance °NW : + 0.23

Barrel no. : 1

Beginning of delivery difference

and maximum rack
travel : 10.50
Tolerance mm : + 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.25
Tolerance mm : + - 0.05

Del. quantity
cm³/1000 strokes : 118.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 3.0

Spred

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 450

Rack travel in mm : 5.10
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 12.5

Tolerance
cm³/1000 strokes : + - 2.0

Check tolerance
cm³/1000S. : + - 4.5

Spred
Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + - 0.20

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 118.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 3.0
Spred
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 90.0
tolerance degree : + - 4.0

RATED SPEED
rack travel mm : 11.30
Rated speed rpm : 1150
Tolerance 1/min : + - 5

rack travel mm : 4.00
Rated speed rpm : 1225
Tolerance 1/min : + - 15

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 67.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 450
rack travel mm : 4.60
Tolerance mm : + - 0.10

Rated speed rpm : 100

CRT mm min. : > 10.00

Testing:

Rated speed rpm : 450
rack travel mm : 5.10
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 600
Tolerance 1/min : + - 30

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.25
Tolerance mm : + - 0.05

Rated speed rpm : 500
rack travel mm : 12.30
Tolerance mm : + - 0.10

Rated speed rpm : 400
rack travel mm : 12.85
Tolerance mm : + - 0.25

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : + - 1.00
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : + - 8.0
Check tolerance
cm³/1000S. : + - 11.0

LOW IDLE

Rated speed rpm : 450
Rack travel in mm : 5.10
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 12.5
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.5
Spred
Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 30.03.98
Test oil : ISO 4113

Combination No. : F 000 409 209

Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025

Governor
Governor design. : RSV400...1100A2C970R
Governor no. : F 000 420 703

Cust. part No. : 3352892

Customer-spec. information

Customer : CUMMINS
Motor : 6 CT
Power KW : 120.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery blocking

°NW after s.o.d. : 11.00
Tolerance : + 0.10
Check
tolerance °NW : + 0.23

Barrel no. : 1

Beginning of delivery difference

and maximum rack
travel : 10.50
Tolerance mm : + 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1000
 Rack travel in mm : 10.65
 Tolerance mm : + - 0.05
 Del. quantity cm³/1000 strokes : 92.5
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 3.0
 Spread
 Tolerance cm³/1000 strokes : 3.5
 Check tolerance cm³/1000S. : 8.0

 Rated speed rpm : 450
 Rack travel in mm : 5.10
 Tolerance mm : + - 0.10
 Del. quantity cm³/1000 strokes : 12.5
 Tolerance cm³/1000 strokes : + - 2.0
 Check tolerance cm³/1000S. : + - 4.5
 Spread
 Tolerance cm³/1000 strokes : 5.5
 Check tolerance cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree : - 3
 Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : + - 0.20
 governor spring pre-tension click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
 Aneroid pressure hPa : -
 Del. quantity cm³/1000 strokes : 92.5
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 3.0
 Spread
 Tolerance cm³/1000 strokes : 3.5
 Check tolerance cm³/1000S. : 8.0

CONTROL LEVER

control lever position degree : 86.0
 tolerance degree : + - 4.0
 RATED SPEED
 rack travel mm : 9.60
 Rated speed rpm : 1045
 Tolerance 1/min : + - 5
 rack travel mm : 4.00
 Rated speed rpm : 1085
 Tolerance 1/min : + - 15
 rack travel mm : 0.85
 Tolerance mm : + - 0.55
 Rated speed rpm : 1250

LOW IDLE

control lever position degree : 67.0
 tolerance degree : + - 4.0
 Setting point w/out bumper spring
 Rated speed rpm : 450
 rack travel mm : 4.60
 Tolerance mm : + - 0.10
 Rated speed rpm : 100
 CRT mm min. : > 19.00

Testing:

Rated speed rpm : 450
rack travel mm : 5.10
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 600
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 10.65
Tolerance mm : + 0.05

Rated speed rpm : 500
rack travel mm : 11.85
Tolerance mm : + 0.05

Rated speed rpm : 700
rack travel mm : 11.45
Tolerance mm : + 0.05

Rated speed rpm : 850
rack travel mm : 11.00
Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 97.5
Tolerance
cm3/1000 strokes : + 2.0
Check tolerance
cm3/1000S. : + 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 700
rack travel mm : 11.45
Tolerance mm : + 0.05
Del. quantity
cm3/1000 strokes : 103.0
Tolerance
cm3/1000 strokes : + 2.0
Check tolerance
cm3/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : + 1.00
Del. quantity
cm3/1000 strokes : 135.0
Tolerance
cm3/1000 strokes : + 8.0
Check tolerance
cm3/1000S. : + 11.0

LOW IDLE

Rated speed rpm : 450
Rack travel in mm : 5.10
Tolerance mm : + 0.10
Del. quantity
cm3/1000 strokes : 12.5
Tolerance
cm3/1000 strokes : + 2.0
Check tolerance
cm3/1000S. : + 4.5
Spread
Tolerance
cm3/1000 strokes : 5.5
Check tolerance
cm3/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 30.03.98
Test oil : ISO 4113

Combination No. : F 000 409 210

Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025

Governor
Governor design. : RSV400...1100A2C971R
Governor no. : F 000 420 704

Cust. part No. : 3354419

Customer-spec. information

Customer : CUMMINS
Motor : 6 CT
Power KW : 120.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery blocking

°NW after s.o.d. : 11.00
Tolerance : + 0.10
Check tolerance °NW : + 0.23

Barrel no. : 1

Beginning of delivery difference

and maximum rack travel : 10.50
Tolerance mm : + 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1100
 Rack travel in mm : 11.35
 Tolerance mm : + - 0.05
 Del. quantity cm³/1000 strokes : 107.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 3.0
 Spread
 Tolerance cm³/1000 strokes : 3.5
 Check tolerance cm³/1000S. : 8.0

 Rated speed rpm : 400
 Rack travel in mm : 5.60
 Tolerance mm : + - 0.10
 Del. quantity cm³/1000 strokes : 16.0
 Tolerance cm³/1000 strokes : + - 2.0
 Check tolerance cm³/1000S. : + - 4.5
 Spread
 Tolerance cm³/1000 strokes : 5.5
 Check tolerance cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree : - 3
 Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : + - 0.20
 governor spring pre-tension click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
 Aneroid pressure hPa : -
 Del. quantity cm³/1000 strokes : 107.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 3.0
 Spread
 Tolerance cm³/1000 strokes : 3.5
 Check tolerance cm³/1000S. : 8.0

CONTROL LEVER

control lever position degree : 89.0
 tolerance degree : + - 4.0
 RATED SPEED
 rack travel mm : 10.30
 Rated speed rpm : 1145
 Tolerance 1/min : + - 5
 rack travel mm : 4.00
 Rated speed rpm : 1190
 Tolerance 1/min : + - 15
 rack travel mm : 0.85
 Tolerance mm : + - 0.55
 Rated speed rpm : 1350

LOW IDLE

control lever position degree : 66.0
 tolerance degree : + - 4.0
 Setting point w/out bumper spring
 Rated speed rpm : 400
 rack travel mm : 5.10
 Tolerance mm : + - 0.10
 Rated speed rpm : 100
 CRT mm min. : > 19.00

Testing:

Rated speed rpm : 400
rack travel mm : 5.60
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 595
Tolerance 1/min : + - 30

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.35
Tolerance mm : + - 0.05

Rated speed rpm : 700
rack travel mm : 12.90
Tolerance mm : + - 0.10

Rated speed rpm : 900
rack travel mm : 12.20
Tolerance mm : + - 0.10

Rack travel in mm : 5.60
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.5
Spread
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : + - 1.00
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : + - 8.0
Check tolerance
cm³/1000S. : + - 11.0

LOW IDLE

Rated speed rpm : 400

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.03.98
Test oil : ISO 4113

Combination No. : F 000 409 211

Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025

Governor
Governor design. : RSV400...1100A2C972R
Governor no. : F 000 420 705

Cust. part No. : 3352893

Customer-spec. information

Customer : CUMMINS
Motor : 6 CT
Power KW : 120.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery blocking

°NW after s.o.d. : 11.00
Tolerance : + 0.10
Check tolerance °NW : + 0.23

Barrel no. : 1

Beginning of delivery difference

and maximum rack travel : 10.50
Tolerance mm : + 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1100
 Rack travel in mm : 10.25
 Tolerance mm : + 0.05
 Del. quantity cm³/1000 strokes : 88.5
 Tolerance cm³/1000 strokes : + 1.0
 Check tolerance cm³/1000S. : + 3.0
 Spread
 Tolerance cm³/1000 strokes : 3.5
 Check tolerance cm³/1000S. : 8.0

 Rated speed rpm : 400
 Rack travel in mm : 5.60
 Tolerance mm : + 0.10
 Del. quantity cm³/1000 strokes : 16.0
 Tolerance cm³/1000 strokes : + 2.0
 Check tolerance cm³/1000S. : + 4.5
 Spread
 Tolerance cm³/1000 strokes : 5.5
 Check tolerance cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree : - 3
 Rated speed rpm : 800
 Rack travel in mm : 0.65
 Tolerance mm : + 0.35
 governor spring pre-tension click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
 Aneroid pressure hPa : -
 Del. quantity cm³/1000 strokes : 88.5
 Tolerance cm³/1000 strokes : + 1.0
 Check tolerance cm³/1000S. : + 3.0
 Spread
 Tolerance cm³/1000 strokes : 3.5
 Check tolerance cm³/1000S. : 8.0

CONTROL LEVER

control lever position degree : 89.0
 tolerance degree : + 4.0
 RATED SPEED
 rack travel mm : 9.20
 Rated speed rpm : 1145
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 1185
 Tolerance 1/min : + 15
 rack travel mm : 0.85
 Tolerance mm : + 0.55
 Rated speed rpm : 1350

LOW IDLE

control lever position degree : 66.0
 tolerance degree : + 4.0

Setting point w/out bumper spring
 Rated speed rpm : 400
 rack travel mm : 5.10
 Tolerance mm : + 0.10
 Rated speed rpm : 100
 CRT mm min. : > 19.00

Testing:

Rated speed rpm : 400
rack travel mm : 5.60
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 595
Tolerance 1/min : + - 30

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 10.25
Tolerance mm : + - 0.05

Rated speed rpm : 500
rack travel mm : 12.20
Tolerance mm : + - 0.10

Rated speed rpm : 750
rack travel mm : 12.20
Tolerance mm : + - 0.10

Rated speed rpm : 950
rack travel mm : 11.40
Tolerance mm : + - 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 103.0
Tolerance
cm3/1000 strokes : + - 2.0
Check tolerance
cm3/1000S. : + - 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 750
rack travel mm : 12.20
Tolerance mm : + - 0.10
Del. quantity
cm3/1000 strokes : 116.0
Tolerance
cm3/1000 strokes : + - 2.0
Check tolerance
cm3/1000S. : + - 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : + - 1.00
Del. quantity
cm3/1000 strokes : 135.0
Tolerance
cm3/1000 strokes : + - 8.0
Check tolerance
cm3/1000S. : + - 11.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 5.60
Tolerance mm : + - 0.10
Del. quantity
cm3/1000 strokes : 16.0
Tolerance
cm3/1000 strokes : + - 2.0
Check tolerance
cm3/1000S. : + - 4.5
Spread
Tolerance
cm3/1000 strokes : 5.5
Check tolerance
cm3/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.04.98
Test oil : ISO 4113

Combination No. : F 000 409 203

Injection pump
Pump designation : PES6A95D410RS2923
EP type number : F 000 400 401

Governor
Governor design. : RQV300...1300AB1326L
Governor no. : F 000 420 302

Cust. part No. : A 028 074 36 02

Customer-spec. information

Customer : MBB
Motor : OM 366LA/EuroI
Power KW : 150.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.20
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 19.00
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.45
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 97.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S : + 3.0

Spread

Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 8.0

Rated speed rpm : 300
 Rack travel in mm : 6.60
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 13.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spread
 Tolerance
 cm³/1000 strokes : 5.5
 Check tolerance
 cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1354
 guide sleeve
 travel mm : 8.35
 Tolerance mm : + 0.15
 Rated speed rpm : 300
 guide sleeve
 travel mm : 1.02
 Tolerance mm : + 0.20
 Rated speed rpm : 974
 guide sleeve
 travel mm : 6.06
 Tolerance mm : + 0.25
 Rated speed rpm : 590
 guide sleeve
 travel mm : 3.50
 Tolerance mm : + 0.25
 Rated speed rpm : 1710
 guide sleeve
 travel mm : 11.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1366
 Rack travel in mm : 16.50
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 900
 Del. quantity
 cm³/1000 strokes : 97.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.0
 Spread
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 62.0
 tolerance degree : + 4.0
 control lever
 position degree : 113.0
 tolerance degree : + 4.0
 RATED SPEED
 rack travel mm : 12.50
 Rated speed rpm : 1345
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 1520
 Tolerance 1/min : + 15
 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1640

LOW IDLE

control lever
 position degree : 73.0
 tolerance degree : + 4.0

control lever
position degree : 21.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 9.00

Testing:

Rated speed rpm : 300
rack travel mm : 6.60
Tolerance mm : + - 0.10

Rated speed rpm : 355

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.45
Tolerance mm : + - 0.05

Rated speed rpm : 750
rack travel mm : 13.45
Tolerance mm : + - 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 13.50
Tolerance mm : + - 0.05

Rated speed rpm : 500
Pressure hPa : -

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 510
rack travel mm : 2.90
Tolerance mm : + - 0.10

Pressure hPa : 270
rack travel mm : 1.30
Tolerance mm : + - 0.10

Start interlock

Rated speed rpm : > 100

Rated speed rpm : < 210

Check
speed 1/min : > 80
Check
speed 1/min : < 230

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 49.0
Tolerance
cm3/1000 strokes : + - 1.0
Check tolerance
cm3/1000S. : + - 3.0
Spread
Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000S. : 8.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.20
Tolerance mm : + - 0.10
Del. quantity
cm3/1000 strokes : 108.0
Tolerance
cm3/1000 strokes : + - 7.5
Check tolerance
cm3/1000S. : + - 10.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 6.60
Tolerance mm : + - 0.10
Del. quantity
cm3/1000 strokes : 13.0
Tolerance
cm3/1000 strokes : + - 2.0
Check tolerance
cm3/1000S. : + - 4.5
Spread
Tolerance
cm3/1000 strokes : 5.5
Check tolerance
cm3/1000S. : 9.0

End of test specification sheet

G25

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.04.98
Test oil : ISO 4113

Combination No. : F 000 409 212

Injection pump
Pump designation : PES6A95D410RS2923
EP type number : F 000 400 401

Governor
Governor design. : RQV300...1300AB1326L
Governor no. : F 000 420 302

Cust. part No. : A 028 074 51 02

Customer-spec. information

Customer : MBB
Motor : OM 366LA/EuroI
Power KW : 150.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.20
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 19.00
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.45
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 97.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 3.0

Spread

Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 8.0

Rated speed rpm : 300
 Rack travel in mm : 6.60
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 13.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 5.5
 Check tolerance
 cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1354
 guide sleeve
 travel mm : 8.35
 Tolerance mm : + 0.15
 Rated speed rpm : 300
 guide sleeve
 travel mm : 1.02
 Tolerance mm : + 0.20
 Rated speed rpm : 974
 guide sleeve
 travel mm : 6.06
 Tolerance mm : + 0.25
 Rated speed rpm : 590
 guide sleeve
 travel mm : 3.50
 Tolerance mm : + 0.25
 Rated speed rpm : 1710
 guide sleeve
 travel mm : 11.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1366
 Rack travel in mm : 16.50
 Tolerance mm : + 1.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 900
 Del. quantity
 cm³/1000 strokes : 97.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 113.0
 tolerance degree : + 4.0
 RATED SPEED
 rack travel mm : 12.50
 Rated speed rpm : 1345
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 1520
 Tolerance 1/min : + 15
 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1640

LOW IDLE

control lever
 position degree : 73.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 9.00

Testing:

Rated speed rpm : 300
rack travel mm : 6.60
Tolerance mm : + - 0.10

Rated speed rpm : 355

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.45
Tolerance mm : + - 0.05

Rated speed rpm : 750
rack travel mm : 13.45
Tolerance mm : + - 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 13.50
Tolerance mm : + - 0.05

Rated speed rpm : 500
Pressure hPa : -

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 270
rack travel mm : 1.20
Tolerance mm : + - 0.10

Pressure hPa : 510
rack travel mm : 2.80
Tolerance mm : + - 0.10

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 210

Check speed 1/min : > 80
Check speed 1/min : < 230

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm3/1000 strokes : 54.0
Tolerance cm3/1000 strokes : + - 1.0
Check tolerance cm3/1000S. : + - 3.0
Spread
Tolerance cm3/1000 strokes : 3.5
Check tolerance cm3/1000S. : 8.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.20
Tolerance mm : + - 0.10
Del. quantity cm3/1000 strokes : 108.0
Tolerance cm3/1000 strokes : + - 7.5
Check tolerance cm3/1000S. : + - 10.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 6.60
Tolerance mm : + - 0.10
Del. quantity cm3/1000 strokes : 13.0
Tolerance cm3/1000 strokes : + - 2.0
Check tolerance cm3/1000S. : + - 4.5
Spread
Tolerance cm3/1000 strokes : 5.5
Check tolerance cm3/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.03.98
Test oil : ISO 4113

Combination No. : 0 400 864 103

Injection pump
Pump designation : PES4A95D410/3RS2789
EP type number : 0 410 894 995

Governor
Governor design. : RSV325...1250A5C871L
Governor no. : 0 420 232 626

Cust. part No. : 0423 1876 KY

Customer-spec. information

Customer : KHD-DMI
Motor : BF4L 913
Power KW : 78.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.50
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 87.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 3.0

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 9.60

Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 14.0

Tolerance
cm³/1000 strokes : + - 2.0

Check tolerance
cm³/1000S. : + - 4.5

Spred

Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : FREE
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + - 0.20

governor spring
pre-tension
click setting x : 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure

hPa : -

Del. quantity
cm³/1000 strokes : 87.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 3.0

Spred

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 102.0
tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 12.50

Rated speed rpm : 1295

Tolerance 1/min : + - 5

rack travel mm : 4.00

Rated speed rpm : 1355

Tolerance 1/min : + - 15

rack travel mm : 0.85

Tolerance mm : + - 0.55

Rated speed rpm : 1565

rack travel mm : 4.00

Rated speed rpm : 1415

Tolerance 1/min : + - 15

LOW IDLE

control lever
position degree : 69.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 325

rack travel mm : 9.10

Tolerance mm : + - 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 325

rack travel mm : 9.60

Tolerance mm : + - 0.10

rack travel mm : 2.00

Rated speed rpm : 605

Tolerance 1/min : + - 30

TORQUE CONTROL

Rated speed rpm : 1250

rack travel mm : 13.50

Tolerance mm : + - 0.05

Rated speed rpm : 500
rack travel mm : 14.20
Tolerance mm : + - 0.10

Rated speed rpm : 750
rack travel mm : 13.90
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1400
rack travel mm : 14.20
Tolerance mm : + - 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 13.30
Tolerance mm : + - 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 300
rack travel mm : 13.70
Tolerance mm : + - 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
rack travel mm : 13.90
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 85.0
Tolerance
cm³/1000 strokes : + - 5.0
Check tolerance
cm³/1000S. : + - 3.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 68.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : + - 0.75
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : + - 7.5
Check tolerance
cm³/1000S. : + - 10.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 9.60
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 14.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.5
Spread
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.03.98
Test oil : ISO 4113

Combination No. : 0 400 864 106

Injection pump
Pump designation : PES4A95D410/3RS2789
EP type number : 0 410 894 995

Governor
Governor design. : RSV325...1250A5C879L
Governor no. : 0 420 232 634

Cust. part No. : 0423 2071 KY

Customer-spec. information

Customer : KHD-DMI
Motor : BF4L 913
Power KW : 78.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.50
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 87.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 9.60

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 14.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spred

Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : FREE
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure

hPa : -

Del. quantity
cm³/1000 strokes : 87.0

Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0

Spred
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 102.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.50

Rated speed rpm : 1295

Tolerance 1/min : + 5

rack travel mm : 4.00

Rated speed rpm : 1355

Tolerance 1/min : + 15

rack travel mm : 0.85

Tolerance mm : + 0.55

Rated speed rpm : 1565

rack travel mm : 4.00

Rated speed rpm : 1415

Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 69.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 9.10
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 325
rack travel mm : 9.60
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 605
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 13.50
Tolerance mm : + 0.05

Rated speed rpm : 500
rack travel mm : 14.20
Tolerance mm : + - 0.10

Rated speed rpm : 750
rack travel mm : 13.90
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1400
rack travel mm : 14.20
Tolerance mm : + - 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 13.30
Tolerance mm : + - 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 300
rack travel mm : 13.70
Tolerance mm : + - 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
rack travel mm : 13.90
Tolerance mm : + - 0.10
Del. quantity
cm3/1000 strokes : 85.0
Tolerance
cm3/1000 strokes : + - 2.0
Check tolerance
cm3/1000S. : + - 4.0
Spread
Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000S. : 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500

Del. quantity
cm3/1000 strokes : 68.0
Tolerance
cm3/1000 strokes : + - 2.0
Check tolerance
cm3/1000S. : + - 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : + - 0.75
Del. quantity
cm3/1000 strokes : 120.0
Tolerance
cm3/1000 strokes : + - 7.5
Check tolerance
cm3/1000S. : + - 10.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 9.60
Tolerance mm : + - 0.10
Del. quantity
cm3/1000 strokes : 14.0
Tolerance
cm3/1000 strokes : + - 2.0
Check tolerance
cm3/1000S. : + - 4.5
Spread
Tolerance
cm3/1000 strokes : 5.5
Check tolerance
cm3/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.12.97
Test oil : ISO 4113

Combination No. : 0 400 866 208BE

Injection pump
Pump designation :
EP type number :

Governor
Governor design. :
Governor no. :

Cust. part No. : 392 1164

Customer-spec. information
Customer : CUMMINS
Motor : 6 CT 8.3
Power KW : 152.0

TEST BENCH REQUIREMENTS

Inlet line : 2.

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 28.0
Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

°NW after s.o.d. : 10.00
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.45
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 125.5

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 3.5

Spred

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 415

Rack travel in mm : 5.60
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : + - 2.0

Check tolerance
cm³/1000S. : + - 4.5

Spred

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + - 0.20

governor spring
pre-tension
click setting x : 4.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 125.5

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 3.5

Spred

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 96.0
tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 11.40
Rated speed rpm : 1115

Tolerance 1/min : + - 5

rack travel mm : 4.00
Rated speed rpm : 1180

Tolerance 1/min : + - 15

rack travel mm : 0.85
Tolerance mm : + - 0.55

Rated speed rpm : 1350

rack travel mm : 4.00
Rated speed rpm : 1190

Tolerance 1/min : + - 15

LOW IDLE

control lever
position degree : 76.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 415
rack travel mm : 5.10
Tolerance mm : + - 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 415
rack travel mm : 5.60
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 470
Tolerance 1/min : + - 30

TORQUE CONTROL
Rated speed rpm : 1050
rack travel mm : 12.45
Tolerance mm : + - 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : + - 1.00
Del. quantity
cm³/1000 strokes : 147.0
Tolerance
cm³/1000 strokes : + - 10.0
Check tolerance
cm³/1000S. : + - 13.0

LOW IDLE

Rated speed rpm : 415

Rack travel in mm : 5.60
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.5
Spred
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.04.98
Test oil : ISO 4113

Combination No. : 0 400 876 434

Injection pump
Pump designation : PES6A95D410RS2864
EP type number : 0 410 896 888

Governor
Governor design. : RSV400...1050A8C2263
: -11L
Governor no. : 0 420 232 635

Cust. part No. : 87 801 607

Customer-spec. information

Customer : NH
Motor : P 396
Power KW : 176.0

TEST BENCH REQUIREMENTS

Inlet Line : 1.3

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 2.60
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.50
Check tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.75
Tolerance mm : + 0.10

Del. quantity
 cm³/1000 strokes : 137.0
 Tolerance
 cm³/1000 strokes : + - 1.0
 Check tolerance
 cm³/1000S. : + - 3.0
 Spred
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 8.0

Rated speed rpm : 450
 Rack travel in mm : 5.75
 Tolerance mm : + - 0.10
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : + - 2.0
 Check tolerance
 cm³/1000S. : + - 4.5
 Spred
 Tolerance
 cm³/1000 strokes : 5.5
 Check tolerance
 cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800

Rack travel in mm : 0.50
 Tolerance mm : + - 0.20

governor spring
 pre-tension
 click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
 hPa : 1200
 Del. quantity
 cm³/1000 strokes : 137.0
 Tolerance
 cm³/1000 strokes : + - 1.0
 Check tolerance
 cm³/1000S. : + - 3.0
 Spred
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 97.0
 tolerance degree : + - 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1095
 rack travel mm : 10.60
 Rated speed rpm : 1165
 Tolerance 1/min : + - 5
 rack travel mm : 4.00
 rack travel mm : 0.85
 Tolerance mm : + - 0.55
 Rated speed rpm : 1300

Rated speed rpm : 1096
 rack travel mm : 10.60
 Rated speed rpm : 1166
 Tolerance 1/min : + - 5
 rack travel mm : 4.00
 rack travel mm : 0.85
 Tolerance mm : + - 0.55
 Rated speed rpm : 1300

Rated speed rpm : 1097
 rack travel mm : 10.60
 Rated speed rpm : 1167
 Tolerance 1/min : + - 5
 rack travel mm : 4.00
 rack travel mm : 0.85
 Tolerance mm : + - 0.55
 Rated speed rpm : 1300

Rated speed rpm : 1098
rack travel mm : 10.60

Rated speed rpm : 1168
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

Rated speed rpm : 1099
rack travel mm : 10.60

Rated speed rpm : 1169
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

Rated speed rpm : 1100
rack travel mm : 10.60

Rated speed rpm : 1170
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 78.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 450
rack travel mm : 5.75
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 585
Tolerance 1/min : + 30

TORQUE CONTROL
Rated speed rpm : 700
rack travel mm : 13.75
Tolerance mm : + 0.10

Rated speed rpm : 500
rack travel mm : 13.80
Tolerance mm : + 0.10

Rated speed rpm : 1050
rack travel mm : 11.20
Tolerance mm : + 0.05

Rated speed rpm : 1050
rack travel mm : 12.00
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.80
Tolerance mm : + 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.80
Tolerance mm : + 0.05

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 12.85
Tolerance mm : + 0.05

Pressure hPa : 600
rack travel mm : 11.90
Tolerance mm : + 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 98.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 164.0
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 11.0

LOW IDLE

Rated speed rpm : 450
Rack travel in mm : 5.75
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spred
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.04.98
Test oil : ISO 4113

Combination No. : F 002 A02 011

Injection pump
Pump designation : PES6A95D320/3RS2881
EP type number : 9 410 037 215

Governor
Governor design. : RSV475...1100A0C888R
Governor no. : F 002 A20 212

Cust. part No. : 3930164

Customer-spec. information
Customer : CUMMINS
Motor : 6BTA
Power KW : 124.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery blocking

°NW after s.o.d. : 7.50
Tolerance : + 0.10
Check tolerance °NW : + 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.65

Tolerance mm : + 0.05
 Del. quantity cm³/1000 strokes : 116.0
 Tolerance cm³/1000 strokes : + 1.0
 Check tolerance cm³/1000S. : + 3.0
 Spread
 Tolerance cm³/1000 strokes : 4.0
 Check tolerance cm³/1000S. : 6.5
 Rated speed rpm : 475
 Rack travel in mm : 5.95
 Tolerance mm : + 0.10
 Del. quantity cm³/1000 strokes : 20.6
 Tolerance cm³/1000 strokes : + 2.0
 Check tolerance cm³/1000S. : + 4.5
 Spread
 Tolerance cm³/1000 strokes : 6.0
 Check tolerance cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree : FREE
 Rated speed rpm : 800

Rack travel in mm : 0.50
 Tolerance mm : + 0.20

governor spring pre-tension
 click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
 Aneroid pressure hPa : 1200
 Del. quantity cm³/1000 strokes : 116.0
 Tolerance cm³/1000 strokes : + 1.0
 Check tolerance cm³/1000S. : + 3.0
 Spread
 Tolerance cm³/1000 strokes : 4.0
 Check tolerance cm³/1000S. : 6.5

CONTROL LEVER

control lever position degree : 94.0
 tolerance degree : + 4.0

RATED SPEED
 rack travel mm : 12.70
 Rated speed rpm : 1115
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1185
 Tolerance 1/min : + 15

rack travel mm : 0.85
 Tolerance mm : + 0.55
 Rated speed rpm : 1300

rack travel mm : 4.00
 Rated speed rpm : 1190
 Tolerance 1/min : + 15

LOW IDLE

control lever position degree : 75.0
 tolerance degree : + 4.0

Control lever difference
 Grad : 19.0
 tolerance degree : + 6.0

Setting point w/out bumper spring

Rated speed rpm : 475
 rack travel mm : 4.95
 Tolerance mm : + 0.10

Rated speed rpm : 100
CRT mm min. : > 19.00

Testing:

Rated speed rpm : 475
rack travel mm : 5.95
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 550
Tolerance 1/min : + - 30

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 13.65
Tolerance mm : + - 0.05

Rated speed rpm : 750

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.70
Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 550
rack travel mm : 12.50
Tolerance mm : + - 0.20

Pressure hPa : 400
rack travel mm : 11.85
Tolerance mm : + - 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm3/1000 strokes : 120.0

Tolerance
cm3/1000 strokes : + - 2.0
Check tolerance
cm3/1000S. : + - 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 83.9
Tolerance
cm3/1000 strokes : + - 1.0
Check tolerance
cm3/1000S. : + - 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + - 0.50
Del. quantity
cm3/1000 strokes : 121.5
Tolerance
cm3/1000 strokes : + - 10.0
Check tolerance
cm3/1000S. : + - 15.0

LOW IDLE

Rated speed rpm : 475
Rack travel in mm : 5.95
Tolerance mm : + - 0.10
Del. quantity
cm3/1000 strokes : 20.6
Tolerance
cm3/1000 strokes : + - 2.0
Check tolerance
cm3/1000S. : + - 4.5
Spread
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.04.98
Test oil : ISO 4113

Combination No. : F 002 A02 050

Injection pump
Pump designation : PES6A95D320/3RS2916
EP type number : F 002 A10 010

Governor
Governor design. : RSV425...1050A0C930R
Governor no. : F 002 A20 236

Cust. part No. : 328 3917

Customer-spec. information

Customer : CUMMINS
Motor : 6BT
Power KW : 100.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery blocking

°NW after s.o.d. : 7.00
Tolerance : + 0.10
Check
tolerance °NW : + 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 11.25
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 98.2

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 3.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 425

Rack travel in mm : 5.05

Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 18.5

Tolerance
cm³/1000 strokes : + - 2.0

Check tolerance
cm³/1000S. : + - 4.5

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : FREE
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + - 0.20

governor spring
pre-tension
click setting x : 2.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050

Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 98.2
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 3.0
Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 95.0
tolerance degree : + - 4.0

RATED SPEED
rack travel mm : 10.25
Rated speed rpm : 1090
Tolerance 1/min : + - 5

rack travel mm : 4.50
Rated speed rpm : 1145
Tolerance 1/min : + - 5

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1275

rack travel mm : 4.50
Rated speed rpm : 1145
Tolerance 1/min : + - 15

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + - 4.0

Control lever difference
Grad : 21.0
tolerance degree : + - 6.0

Setting point w/out bumper spring

Rated speed rpm : 425
rack travel mm : 4.05
Tolerance mm : + - 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 425
rack travel mm : 5.05
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 600
Tolerance 1/min : + - 30

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 11.25
Tolerance mm : + - 0.05

Rated speed rpm : 800
rack travel mm : 11.80
Tolerance mm : + - 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.90
Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 650
rack travel mm : 11.25
Tolerance mm : + - 0.20

Pressure hPa : 400
rack travel mm : 10.60
Tolerance mm : + - 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 800
Del. quantity
cm3/1000 strokes : 106.2

Tolerance
cm3/1000 strokes : + - 2.0
Check tolerance
cm3/1000S. : + - 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 79.5
Tolerance
cm3/1000 strokes : + - 1.0
Check tolerance
cm3/1000S. : + - 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + - 0.50
Del. quantity
cm3/1000 strokes : 121.5
Tolerance
cm3/1000 strokes : + - 10.0
Check tolerance
cm3/1000S. : + - 15.0

LOW IDLE

Rated speed rpm : 425

Rack travel in mm : 5.05
Tolerance mm : + - 0.10
Del. quantity
cm3/1000 strokes : 18.5
Tolerance
cm3/1000 strokes : + - 2.0
Check tolerance
cm3/1000S. : + - 4.5
Spread
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 27.03.98
Test oil : ISO 4113

Combination No. : 0 402 746 621

Injection pump
Pump designation : PES6P120A720RS7424
EP type number : 0 412 726 964

Governor
Governor design. : RQV325...875PA944
: -24K
Governor no. : 0 421 815 535

Cust. part No. : 313GC5228-P14

Customer-spec. information

Customer : MACK
Motor : EM7-300
Power KW : 224.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 413 359 008

Inlet press. bar : 2.8
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Prestroke mm : 3.30
Tolerance mm : + 0.05

Check
tolerance mm : + 0.10

Rack travel in mm : 12.00
Tolerance mm : + 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery blocking

Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 14.10
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 312.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spred

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 600

Rack travel in mm : 4.80
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 32.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 5.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 939

guide sleeve
travel mm : 7.51

Tolerance mm : + 0.15

Rated speed rpm : 340

guide sleeve
travel mm : 1.92

Tolerance mm : + 0.20

Rated speed rpm : 726

guide sleeve
travel mm : 5.63

Tolerance mm : + 0.25

Rated speed rpm : 510

guide sleeve
travel mm : 3.81
Tolerance mm : + 0.25

Rated speed rpm : 1370
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875

Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 312.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spred

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 103.0

tolerance degree : + 4.0

RATED SPEED

rack travel mm : 13.00

Rated speed rpm : 930

Tolerance 1/min : + 5

Check

speed 1/min : + 10

rack travel mm : 4.00

Rated speed rpm : 1115

Tolerance 1/min : + 15

Check

speed 1/min : + 20

rack travel mm : 0.50

Tolerance mm : + 0.50

Rated speed rpm : 1210

LOW IDLE

control lever
position degree : 65.0

tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 275

CRT mm min. : > 6.06

Testing:

Rated speed rpm : 340
rack travel mm : 4.80
Tolerance mm : + - 0.10

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 875
rack travel mm : 14.10
Tolerance mm : + - 0.05

Rated speed rpm : 510
rack travel mm : 14.85
Tolerance mm : + - 0.10

Rated speed rpm : 625
rack travel mm : 14.70
Tolerance mm : + - 0.20

Rated speed rpm : 400
rack travel mm : 14.25
Tolerance mm : + - 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 1200

Rated speed rpm : 510
Pressure hPa : -
rack travel mm : 9.20
Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 510

Pressure hPa : 740
rack travel mm : 13.20
Tolerance mm : + - 0.20

Pressure hPa : 400
rack travel mm : 10.60
Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 250

Check speed 1/min : > 80
Check speed 1/min : < 255

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200
Rated speed rpm : 510
Del. quantity cm3/1000 strokes : 402.0
Tolerance cm3/1000 strokes : + - 3.0
Check tolerance cm3/1000S. : + - 6.0
Spread
Tolerance cm3/1000 strokes : 8.0
Check tolerance cm3/1000S. : 12.0

rack travel mm : 14.70
Tolerance mm : + - 0.20

Aneroid pressure

hPa : -
Rated speed rpm : 400
Del. quantity cm3/1000 strokes : 187.5
Tolerance cm3/1000 strokes : + - 2.0
Check tolerance cm3/1000S. : + - 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : + - 0.50
Del. quantity cm3/1000 strokes : 190.0
Tolerance cm3/1000 strokes : + - 20.0
Check tolerance cm3/1000S. : + - 30.0

LOW IDLE

Rated speed rpm : 600

Rack travel in mm : 4.80

Tolerance mm : + - 0.10

Del. quantity

cm³/1000 strokes : 32.0

Tolerance

cm³/1000 strokes : + - 3.0

Check tolerance

cm³/1000S. : + - 5.0

Speed

Tolerance

cm³/1000 strokes : 5.0

Check tolerance

cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.03.98
Test oil : ISO 4113

Combination No. : 0 402 746 622

Injection pump
Pump designation : PES6P120A720RS7424
EP type number : 0 412 726 964

Governor
Governor design. : RQV325...900PA944
: -25K
Governor no. : 0 421 815 536

Cust. part No. : 313GC5228-P16

Customer-spec. information

Customer : MACK
Motor : E7-350
Power KW : 261.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 413 359 008

Inlet press. bar : 2.8
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Prestroke mm : 2.80
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 12.00
Tolerance mm : + 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery blocking

Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 14.15
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 319.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spred

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 600

Rack travel in mm : 4.80
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 32.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 5.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900

Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 319.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spred

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 117.0
tolerance degree : + 6.0

RATED SPEED

rack travel mm : 13.10
Rated speed rpm : 945
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1115
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 64.0
tolerance degree : + 6.0

Setting point w/out bumper spring

Rated speed rpm : 275

CRT mm min. : > 6.10

Testing:

Rated speed rpm : 340
rack travel mm : 4.80
Tolerance mm : + 0.10

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 14.15
Tolerance mm : + 0.05

Rated speed rpm : 625
rack travel mm : 13.60
Tolerance mm : + 0.10

Rated speed rpm : 500
rack travel mm : 12.80
Tolerance mm : + 0.40

**ANEROID/ALTITUDE
COMPENSATOR TEST****SETTING**

Rated speed rpm : 900
Pressure hPa : 1200

Rated speed rpm : 900
Pressure hPa : -
rack travel mm : 8.50
Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 900

Pressure hPa : 810
rack travel mm : 13.20
Tolerance mm : + - 0.20

Pressure hPa : 420
rack travel mm : 10.15
Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 250

Check speed 1/min : > 80
Check speed 1/min : < 255

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 625
Del. quantity
cm3/1000 strokes : 339.5
Tolerance
cm3/1000 strokes : + - 3.0
Check tolerance
cm3/1000S. : + - 6.0
Spread
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

rack travel mm : 12.80

Tolerance mm : + - 0.40

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm3/1000 strokes : 171.0
Tolerance
cm3/1000 strokes : + - 2.0
Check tolerance
cm3/1000S. : + - 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + - 1.00
Del. quantity
cm3/1000 strokes : 190.0
Tolerance
cm3/1000 strokes : + - 20.0
Check tolerance
cm3/1000S. : + - 30.0

LOW IDLE

Rated speed rpm : 600

Rack travel in mm : 4.80
Tolerance mm : + - 0.10
Del. quantity
cm3/1000 strokes : 32.0
Tolerance
cm3/1000 strokes : + - 3.0
Check tolerance
cm3/1000S. : + - 5.0
Spread
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 18.03.98
 Test oil : ISO 4113

Combination No. : 0 403 466 181

Injection pump
 Pump designation : PES6MW100/120RS1238
 EP type number : 0 413 406 237

Governor
 Governer design. : RSV500...1000MW2A411
 Governer no. : 0 420 085 302

Cust. part No. : 3930526

Customer-spec. information

Customer : CDC
 Motor : 6 CT
 Power KW : 133.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
 temp. °C : 40
 Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
 Tolerance bar : + 0.1

Test nozzle holder
 assembly : 1 688 901 101

Opening pressure
 bar : 208.5
 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
 Tolerance bar : + 1.0

Prestroke mm : 2.80
 Tolerance mm : + 0.05
 Check tolerance mm : + 0.10

Rack travel in mm : 10.50
 Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300
 Tolerance : + 0.50
 Check tolerance °NW : + 0.75

Start of delivery blocking

°NW after s.o.d. : 7.50
 Tolerance : + 0.50
 Check tolerance °NW : + 0.75

Barrel no. : 1

Beginning of delivery difference
 and maximum rack travel : 15.00
 Difference ° CS : 2.00

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.25
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 130.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spred

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 500

Rack travel in mm : 5.50
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 21.5

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spred

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure

hPa : 1200

Del. quantity
cm³/1000 strokes : 130.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spred

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 100.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.25
Rated speed rpm : 1055

Tolerance 1/min : + 5

Check
speed 1/min : + 15

rack travel mm : 4.00
Rated speed rpm : 1160

Tolerance 1/min : + 5

Check
speed 1/min : + 10

rack travel mm : 1.00
Tolerance mm : + 0.70

Rated speed rpm : 1250

rack travel mm : 4.00
Rated speed rpm : 1160

Tolerance 1/min : + 15

Check
speed 1/min : + 20

LOW IDLE

control lever
position degree : 83.0
tolerance degree : + 4.0

Control lever difference
Grad : 17.0
tolerance degree : + 6.0

Setting point w/out bumper spring

Rated speed rpm : 500
rack travel mm : 5.00
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 500
rack travel mm : 5.50
Tolerance mm : + 0.10

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.25
Tolerance mm : + 0.05

Rated speed rpm : 700
rack travel mm : 12.85
Tolerance mm : + 0.10

Rated speed rpm : 850
rack travel mm : 12.75
Tolerance mm : + 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.95
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 880
rack travel mm : 12.40

Tolerance mm : + 0.20
Pressure hPa : 600
rack travel mm : 11.40
Tolerance mm : + 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 850
rack travel mm : 12.75
Tolerance mm : + 0.20
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 122.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + 1.00
Del. quantity
cm³/1000 strokes : 177.0
Tolerance
cm³/1000 strokes : + 10.0
Check tolerance
cm³/1000S. : + 13.0

LOW IDLE

Rated speed rpm : 500

Rack travel in mm : 5.50
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 21.5
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 09.04.98
Test oil : ISO 4113

Combination No. : 0 402 076 790

Injection pump
Pump designation : PES6P120A720RS3352
EP type number : 0 412 026 780

Governor
Governor design. : RSV400...1100P2A599
: -5
Governor no. : 0 421 833 525

Cust. part No. : RE66242

Customer-spec. information

Customer : DEERE
Motor : 6081TF001
Power KW : 149.0

TEST BENCH REQUIREMENTS

Inlet Line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 2.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Prestroke mm : 3.60
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

°NW after s.o.d. : 6.50
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 1

Beginning of delivery difference

and maximum rack
travel : 14.00
Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.55
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 134.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spred

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 400

Rack travel in mm : 5.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 26.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Spred

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure
hPa : 900

Del. quantity
cm³/1000 strokes : 134.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spred

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 97.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.50
Rated speed rpm : 1160

Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1215

Tolerance 1/min : \pm 5

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1350

rack travel mm : 4.00
Rated speed rpm : 1225

Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 5.20

Tolerance mm : \pm 0.10

Rated speed rpm : 100
CRT mm min. : > 19.00

Testing:

Rated speed rpm : 400
rack travel mm : 5.70
Tolerance mm : + - 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.55
Tolerance mm : + - 0.05

Rated speed rpm : 700
rack travel mm : 11.90
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.20
Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 550
rack travel mm : 11.00
Tolerance mm : + - 0.20

Pressure hPa : 210
rack travel mm : 9.80
Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 100
Check speed 1/min : > 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 900
Rated speed rpm : 700
Del. quantity cm3/1000 strokes : 150.5
Tolerance cm3/1000 strokes : + - 2.0
Check tolerance cm3/1000S. : + - 4.0

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm3/1000 strokes : 78.0
Tolerance cm3/1000 strokes : + - 2.0
Check tolerance cm3/1000S. : + - 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : + - 0.50
Del. quantity cm3/1000 strokes : 105.0
Tolerance cm3/1000 strokes : + - 20.0
Check tolerance cm3/1000S. : + - 25.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 5.70
Tolerance mm : + - 0.10
Del. quantity cm3/1000 strokes : 26.0
Tolerance cm3/1000 strokes : + - 2.0
Check tolerance cm3/1000S. : + - 4.5
Spread
Tolerance cm3/1000 strokes : 6.0
Check tolerance cm3/1000S. : 8.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.04.98
Test oil : ISO 4113

Combination No. : 0 402 076 791

Injection pump
Pump designation : PES6P120A720RS3352
EP type number : 0 412 026 780

Governor
Governor design. : RSV400...1100P2A599
: -6
Governor no. : 0 421 833 526

Cust. part No. : RE66241

Customer-spec. information

Customer : DEERE
Motor : 6081TF001
Power KW : 149.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Prestroke mm : 3.60
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

°NW after s.o.d. : 6.50
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 1

Beginning of delivery difference
and maximum rack
travel : 14.00
Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.55
Tolerance mm : + - 0.05

Del. quantity cm³/1000 strokes : 134.5

Tolerance cm³/1000 strokes : + - 1.0

Check tolerance cm³/1000S. : + - 3.0

Spread

Tolerance cm³/1000 strokes : 4.0

Check tolerance cm³/1000S. : 6.5

Rated speed rpm : 400

Rack travel in mm : 5.70
Tolerance mm : + - 0.10

Del. quantity cm³/1000 strokes : 26.0

Tolerance cm³/1000 strokes : + - 2.0

Check tolerance cm³/1000S. : + - 4.5

Spread

Tolerance cm³/1000 strokes : 6.0

Check tolerance cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + - 0.20

governor spring pre-tension click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure hPa : 900
Del. quantity cm³/1000 strokes : 134.5
Tolerance cm³/1000 strokes : + - 1.0
Check tolerance cm³/1000S. : + - 3.0
Spread
Tolerance cm³/1000 strokes : 4.0
Check tolerance cm³/1000S. : 6.5

CONTROL LEVER

control lever position degree : 97.0
tolerance degree : + - 6.0

RATED SPEED
rack travel mm : 10.50
Rated speed rpm : 1160
Tolerance 1/min : + - 5

rack travel mm : 4.00
Rated speed rpm : 1215
Tolerance 1/min : + - 5

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1350

rack travel mm : 4.00
Rated speed rpm : 1225
Tolerance 1/min : + - 15

LOW IDLE

control lever position degree : 74.0
tolerance degree : + - 6.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 5.20
Tolerance mm : + - 0.10

Testing:

Rated speed rpm	:	400
rack travel mm	:	5.70
Tolerance mm	:	+/- 0.10

TORQUE CONTROL

Rated speed rpm	:	1100
rack travel mm	:	11.55
Tolerance mm	:	+/- 0.05

Rated speed rpm	:	700
rack travel mm	:	11.90
Tolerance mm	:	+/- 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm	:	500
Pressure hPa	:	900

Rated speed rpm	:	500
Pressure hPa	:	-
rack travel mm	:	9.20
Tolerance mm	:	+/- 0.20

MEASUREMENT

Rated speed rpm	:	500
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Pressure hPa	:	550
rack travel mm	:	11.00
Tolerance mm	:	+/- 0.20

Pressure hPa	:	210
rack travel mm	:	9.80
Tolerance mm	:	+/- 0.05

Start interlock

Rated speed rpm	:	> 100
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Check speed 1/min	:	> 80
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FUEL DELIVERY CHARACTERISTICS

Aneroid pressure		
hPa	:	900
Rated speed rpm	:	700
Del. quantity		
cm3/1000 strokes	:	150.5

Tolerance		
cm3/1000 strokes	:	+/- 2.0
Check tolerance		
cm3/1000S.	:	+/- 4.0

Aneroid pressure

hPa	:	-
Rated speed rpm	:	500
Del. quantity		
cm3/1000 strokes	:	78.0
Tolerance		
cm3/1000 strokes	:	+/- 2.0
Check tolerance		
cm3/1000S.	:	+/- 4.0

STARTING FUEL DELIVERY

Rated speed rpm	:	100
rack travel mm	:	21.00
Tolerance mm	:	+/- 0.50
Del. quantity		
cm3/1000 strokes	:	105.0
Tolerance		
cm3/1000 strokes	:	+/- 20.0
Check tolerance		
cm3/1000S.	:	+/- 25.0

LOW IDLE

Rated speed rpm	:	400
Rack travel in mm	:	5.70
Tolerance mm	:	+/- 0.10
Del. quantity		
cm3/1000 strokes	:	26.0
Tolerance		
cm3/1000 strokes	:	+/- 2.0
Check tolerance		
cm3/1000S.	:	+/- 4.5
Spread		
Tolerance		
cm3/1000 strokes	:	6.0
Check tolerance		
cm3/1000S.	:	8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.04.98
Test oil : ISO 4113

Combination No. : F 002 A0Z 026CB

Injection pump
Pump designation : PES4A95D320/3RS2880
EP type number : 9 410 037 214

Governor
Governor design. : RSV475...1250A0C904R
Governor no. : F 002 A20 220

Cust. part No. : 3935030

Customer-spec. information

Customer : CDC
Motor : 4BT3.9
Power KW : 54.5

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 014

outside diameter : 6.0

x inside diameter : 2.0
x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Prestroke mm : 2.45
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery blocking

°NW after s.o.d. : 8.50
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.35
Tolerance mm : + 0.05

Del. quantity cm³/1000 strokes : 85.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 3.0
 Spreed
 Tolerance cm³/1000 strokes : 3.5
 Check tolerance cm³/1000S. : 6.0

 Rated speed rpm : 450
 Rack travel in mm : 5.40
 Tolerance mm : + - 0.10
 Del. quantity cm³/1000 strokes : 16.0
 Tolerance cm³/1000 strokes : + - 2.0
 Check tolerance cm³/1000S. : + - 4.5
 Spreed
 Tolerance cm³/1000 strokes : 3.5
 Check tolerance cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree : - 3
 Rated speed rpm : 800

Rack travel in mm : 0.50
 Tolerance mm : + - 0.20

governor spring pre-tension
 click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure hPa : -
 Del. quantity cm³/1000 strokes : 85.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 3.0
 Spreed
 Tolerance cm³/1000 strokes : 3.5
 Check tolerance cm³/1000S. : 6.0

CONTROL LEVER

control lever position degree : 113.0
 tolerance degree : + - 4.0

RATED SPEED
 rack travel mm : 9.30
 Rated speed rpm : 1365
 Tolerance 1/min : + - 5
 Check speed 1/min : + - 10

rack travel mm : 4.00
 Rated speed rpm : 1430
 Tolerance 1/min : + - 5
 Check speed 1/min : + - 10

rack travel mm : 0.85
 Tolerance mm : + - 0.55
 Rated speed rpm : 1490

rack travel mm : 4.00
 Rated speed rpm : 1440
 Tolerance 1/min : + - 15
 Check speed 1/min : + - 20

LOW IDLE

control lever position degree : 85.0
 tolerance degree : + - 4.0

Control lever difference
 Grad : 28.0
 tolerance degree : + - 6.0

Setting point w/out bumper spring

Rated speed rpm : 450
rack travel mm : 4.90
Tolerance mm : + - 0.10

Rated speed rpm : 100
CRT mm min. : > 19.00

Testing:

Rated speed rpm : 450
rack travel mm : 5.40
Tolerance mm : + - 0.10

TORQUE CONTROL
Rated speed rpm : 1250
rack travel mm : 10.35
Tolerance mm : + - 0.05

Rated speed rpm : 500

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + - 0.50
Del. quantity
cm³/1000 strokes : 121.0
Tolerance
cm³/1000 strokes : + - 10.0
Check tolerance
cm³/1000S. : + - 15.0

LOW IDLE

Rated speed rpm : 450
Rack travel in mm : 5.40
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.5
Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.04.98
Test oil : ISO 4113

Combination No. : 0 401 846 529

Injection pump
Pump designation : PE6P120A320RS3186
EP type number : 0 411 826 756

Governor
Governor design. : RQV250...1025PA921
: -4
Governor no. : 0 421 813 787

Cust. part No. : 422719-P05 V. 06/92

Customer-spec. information

Customer : VOLVO-TRUCK
Motor : TD102F (Q)
Power KW : 220.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + - 2.0

Overflow valve : 2 417 413 046

Inlet press. bar : 2.5
Tolerance bar : + - 0.1

Overflow quantity
min. l/h : 120
Tolerance l/h : + - 20.0

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : + - 1.5

Test Lines : 1 680 750 075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + - 1.0

Prestroke mm : 2.65
Tolerance mm : + - 0.05
Check
tolerance mm : + - 0.10

Rack travel in mm : 10.00
Tolerance mm : + - 0.50
Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + - 0.50
Check
tolerance °NW : + - 0.75

Start of delivery mark

Tolerance : + - 0.50
Check
tolerance °NW : + - 0.75

Barrel no. : 1

BASIC SETTINGRated speed rpm : 700

Rack travel in mm : 12.45
Tolerance mm : + - 0.05

Del. quantity
cm³/1000 strokes : 198.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 250

Rack travel in mm : 5.10
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 19.0
Tolerancecm³/1000 strokes : + - 2.5
Check tolerancecm³/1000S. : + - 5.0
SpredTolerance
cm³/1000 strokes : 5.0
Check tolerancecm³/1000S. : 7.0

**(B) SETTING OF INJECTION PUMP
WITH GOVERNOR**

GUIDE SLEEVE TRAVELRated speed rpm : 1080
guide sleeve
travel mm : 8.40
Tolerance mm : + - 0.10

Rated speed rpm : 250
guide sleeve
travel mm : 1.25

Tolerance mm : + - 0.05

Rated speed rpm : 900
guide sleeve
travel mm : 6.50
Tolerance mm : + - 0.10

Rated speed rpm : 430
guide sleeve
travel mm : 3.65
Tolerance mm : + - 0.15

Rated speed rpm : 700
guide sleeve
travel mm : 6.50
Tolerance mm : + - 0.10

GUIDE SLEEVE POSITIONcontrol lever
position degree : - 1
Rated speed rpm : 1080

Rack travel in mm : 16.50
Tolerance mm : + - 1.30

FULL LOAD DELIVERY AT FULL LOAD STOPRated speed rpm : 700
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 198.0
Tolerancecm³/1000 strokes : + - 1.0
Check tolerancecm³/1000S. : + - 4.0
SpredTolerance
cm³/1000 strokes : 5.0
Check tolerancecm³/1000S. : 9.0

CONTROL LEVERcontrol lever
position degree : 62.0
tolerance degree : + - 4.0

control lever
position degree : 117.0
tolerance degree : + - 4.0

RATED SPEED
rack travel mm : 11.45

Rated speed rpm : 1060
Tolerance 1/min : + - 5

rack travel mm : 4.00
Rated speed rpm : 1135
Tolerance 1/min : + - 15

rack travel mm : 0.50
Tolerance mm : + - 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 65.0
tolerance degree : + - 4.0

control lever
position degree : 8.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. : > 6.60

Testing:

Rated speed rpm : 250
rack travel mm : 5.10
Tolerance mm : + - 0.10

Rated speed rpm : 300

TORQUE CONTROL
Rated speed rpm : 700
rack travel mm : 12.45
Tolerance mm : + - 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 12.45
Tolerance mm : + - 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.75

Tolerance mm : + - 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 510
rack travel mm : 2.35
Tolerance mm : + - 0.20

Pressure hPa : 100
rack travel mm : 0.25
Tolerance mm : + - 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 144.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0

LOW IDLE

Rated speed rpm : 250
Rack travel in mm : 5.10
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + - 2.5
Check tolerance
cm³/1000S. : + - 5.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.03.98
Test oil : ISO 4113

Combination No. : 0 401 856 701

Injection pump
Pump designation : PE6P110A721RS3101
EP type number : 0 411 816 725

Governor
Governor design. : RQV250/1200PA413
Governor no. : 0 421 813 333

Cust. part No. :

Customer-spec. information

Customer : STEYR
Motor : WD615.67
Power KW : 206.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 12.05
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 163.0

Tolerance cm³/1000 strokes : + 1.0
 Check tolerance cm³/1000S. : + 4.0
 Spread
 Tolerance cm³/1000 strokes : 4.0
 Check tolerance cm³/1000S. : 8.0
 Rated speed rpm : 250
 Rack travel in mm : 5.90
 Tolerance mm : + 0.10
 Del. quantity cm³/1000 strokes : 15.0
 Tolerance cm³/1000 strokes : + 3.0
 Check tolerance cm³/1000S. : + 5.5
 Spread
 Tolerance cm³/1000 strokes : 4.0
 Check tolerance cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1256
 guide sleeve travel mm : 7.59
 Tolerance mm : + 0.25
 Rated speed rpm : 250
 guide sleeve travel mm : 0.64
 Tolerance mm : + 0.25
 Rated speed rpm : 1060
 guide sleeve travel mm : 6.07
 Tolerance mm : + 0.25
 Rated speed rpm : 564
 guide sleeve travel mm : 3.52
 Tolerance mm : + 0.25
 Rated speed rpm : 614

guide sleeve travel mm : 3.90
 Tolerance mm : + 0.25
 Rated speed rpm : 740
 guide sleeve travel mm : 4.41
 Tolerance mm : + 0.25
 Rated speed rpm : 1441
 guide sleeve travel mm : 10.00
 Tolerance mm : + 0.25
 Rated speed rpm : 1560
 guide sleeve travel mm : 11.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever position degree : - 1
 Rated speed rpm : 1390
 Rack travel in mm : 16.50
 Tolerance mm : + 1.30

CONTROL LEVER

control lever position degree : 45.0
 tolerance degree : + 4.0
 RATED SPEED
 rack travel mm : 11.00
 Rated speed rpm : 1245
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 1350
 Tolerance 1/min : + 15
 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1450

LOW IDLE

control lever position degree : 13.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 7.50

Testing:

Rated speed rpm : 250

rack travel mm : 5.90

Tolerance mm : + - 0.10

rack travel mm : 2.00

Rated speed rpm : 390

Tolerance 1/min : + - 30

TORQUE CONTROL

Rated speed rpm : 1200

rack travel mm : 12.05

Tolerance mm : + - 0.05

Rated speed rpm : 700

rack travel mm : 12.45

Tolerance mm : + - 0.10

Rated speed rpm : 880

rack travel mm : 12.25

Tolerance mm : + - 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500

Pressure hPa : 700

rack travel mm : 12.45

Tolerance mm : + - 0.10

Rated speed rpm : 500

Pressure hPa : -

rack travel mm : 10.10

Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 330

rack travel mm : 10.80

Tolerance mm : + - 0.20

Pressure hPa : 420

rack travel mm : 11.55

Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 100

Rated speed rpm : < 170

Check speed 1/min : > 80

Check speed 1/min : < 190

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 700

Rated speed rpm : 700

Del. quantity cm³/1000 strokes : 167.0

Tolerance cm³/1000 strokes : + - 2.0

Check tolerance cm³/1000S. : + - 4.0

rack travel mm : 12.25

Tolerance mm : + - 0.05

Aneroid pressure

hPa : -

Rated speed rpm : 700

Del. quantity cm³/1000 strokes : 122.0

Tolerance cm³/1000 strokes : + - 2.0

Check tolerance cm³/1000S. : + - 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 17.50

Tolerance mm : + - 0.20

Del. quantity cm³/1000 strokes : 220.0

Tolerance cm³/1000 strokes : + - 15.0

Check tolerance cm³/1000S. : + - 19.0

LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 5.90

Tolerance mm : + - 0.10

Del. quantity

cm³/1000 strokes : 15.0

Tolerance

cm³/1000 strokes : + - 3.0

Check tolerance

cm³/1000S. : + - 5.5

Spred

Tolerance

cm³/1000 strokes : 4.0

Check tolerance

cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.04.98
Test oil : ISO 4113

Combination No. : 0 401 886 702

Injection pump
Pump designation : PE6P110A721RS3341
EP type number : 0 411 816 796

Governor
Governor design. : RSV400...1200P1A527
: -1
Governor no. : 0 421 833 455

Cust. part No. : 615.60.08.0039

Customer-spec. information

Customer : SNF
Motor : WD615.88
Power KW : 228.0

TEST BENCH REQUIREMENTS

Inlet Line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 457 413 012

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 13.80
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 188.0

Tolerance cm³/1000 strokes : + 1.0

Check tolerance cm³/1000S. : + 4.0

Spread

Tolerance cm³/1000 strokes : 4.0

Check tolerance cm³/1000S. : 7.5

Rated speed rpm : 400

Rack travel in mm : 3.10

Tolerance mm : + 0.10

Del. quantity cm³/1000 strokes : 14.0

Tolerance cm³/1000 strokes : + 3.0

Check tolerance cm³/1000S. : + 5.5

Spread

Tolerance cm³/1000 strokes : 4.5

Check tolerance cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring pre-tension
click setting x : 4.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure hPa : 1200

Del. quantity cm³/1000 strokes : 188.0

Tolerance cm³/1000 strokes : + 1.0

Check tolerance cm³/1000S. : + 4.0

Spred

Tolerance cm³/1000 strokes : 4.0

Check tolerance cm³/1000S. : 7.5

CONTROL LEVER

control lever position degree : 116.0

tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.80

Rated speed rpm : 1245

Tolerance 1/min : + 5

rack travel mm : 4.00

Rated speed rpm : 1300

Tolerance 1/min : + 15

rack travel mm : 0.85

Tolerance mm : + 0.55

Rated speed rpm : 1400

LOW IDLE

control lever position degree : 76.0

tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 400

rack travel mm : 3.60

Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 9.50

Testing:

Rated speed rpm : 400

rack travel mm : 3.10

Tolerance mm : + 0.10

rack travel mm : 2.00

Rated speed rpm : 465
Tolerance 1/min : + - 30

TORQUE CONTROL
Rated speed rpm : 1200
rack travel mm : 13.80
Tolerance mm : + - 0.05

Rated speed rpm : 700
rack travel mm : 13.80
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.80
Tolerance mm : + - 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.10
Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 360
rack travel mm : 10.90
Tolerance mm : + - 0.20

Pressure hPa : 600
rack travel mm : 12.80
Tolerance mm : + - 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 700
Del. quantity
cm3/1000 strokes : 198.0
Tolerance
cm3/1000 strokes : + - 3.0
Check tolerance
cm3/1000S. : + - 6.0

Aneroid pressure
hPa : -

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 123.0
Tolerance
cm3/1000 strokes : + - 2.0
Check tolerance
cm3/1000S. : + - 5.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.30
Tolerance mm : + - 0.20
Del. quantity
cm3/1000 strokes : 205.0
Tolerance
cm3/1000 strokes : + - 15.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 3.10
Tolerance mm : + - 0.10
Del. quantity
cm3/1000 strokes : 14.0
Tolerance
cm3/1000 strokes : + - 3.0
Check tolerance
cm3/1000S. : + - 5.5
Spread
Tolerance
cm3/1000 strokes : 4.5
Check tolerance
cm3/1000S. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.03.98
Test oil : ISO 4113

Combination No. : 0 401 946 701

Injection pump
Pump designation : PE6P120A320RS3240
EP type number : 0 411 826 786

Governor
Governor design. : RQV250...1025PA371
Governor no. : 0 421 813 303

Cust. part No. : 8193548

Customer-spec. information

Customer : VOLVO-TRUCK
Motor : TD122FLs
Power KW : 240.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 457 413 046

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Del. quantity
cm³/1000 strokes : 252.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 250

Rack travel in mm : 6.60
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : + 2.5

Check tolerance
cm³/1000S. : + 5.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1100

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure

hPa : 1200

Del. quantity
cm³/1000 strokes : 252.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 65.0
tolerance degree : + 4.0

control lever
position degree : 120.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.65
Rated speed rpm : 1070
Tolerance 1/min : + 5

rack travel mm : 4.00
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 64.0
tolerance degree : + 4.0

control lever
position degree : 9.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

Testing:

Rated speed rpm : 250
rack travel mm : 6.60
Tolerance mm : + 0.10

Rated speed rpm : 315

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.65
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.70
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 780
rack travel mm : 3.30
Tolerance mm : \pm 0.10

Pressure hPa : 90
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 290.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 250
Rack travel in mm : 6.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000S. : \pm 5.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.04.98
Test oil : ISO 4113

Combination No. : 0 402 066 704

Injection pump
Pump designation : PES6P120A120RS3358
EP type number : 0 412 026 784

Governor
Governor design. : RSV475...1250P2A613
Governor no. : 0 421 833 501

Cust. part No. : 3927359

Customer-spec. information

Customer : CDC
Motor : 6BTA-590 ELITE
Power KW : 149.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 110
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery blocking

°NW after s.o.d. : 7.75
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.45
Tolerance mm : + - 0.05

Del. quantity
cm³/1000 strokes : 167.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 3.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 475

Rack travel in mm : 5.50
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 22.0

Tolerance
cm³/1000 strokes : + - 2.0

Check tolerance
cm³/1000S. : + - 4.5

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + - 0.20

governor spring
pre-tension
click setting x : 3.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 167.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 3.0

Spred

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 108.0
tolerance degree : + - 4.0

RATED SPEED
rack travel mm : 11.45
Rated speed rpm : 1305
Tolerance 1/min : + - 5

rack travel mm : 4.00
Rated speed rpm : 1405
Tolerance 1/min : + - 15

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1530

rack travel mm : 4.00
Rated speed rpm : 1415
Tolerance 1/min : + - 15

LOW IDLE

control lever
position degree : 84.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 475
rack travel mm : 5.00
Tolerance mm : + - 0.10

Testing:

Rated speed rpm : 475
rack travel mm : 5.50
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 600
Tolerance 1/min : + - 30

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 12.45
Tolerance mm : + - 0.05

Rated speed rpm : 750
rack travel mm : 12.45
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.45
Tolerance mm : + - 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.40
Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 900
rack travel mm : 11.50
Tolerance mm : + - 0.20

Pressure hPa : 575
rack travel mm : 10.05
Tolerance mm : + - 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
Del. quantity
cm3/1000 strokes : 181.5

Tolerance
cm3/1000 strokes : + - 3.0
Check tolerance
cm3/1000S. : + - 6.0
Spread
Tolerance
cm3/1000 strokes : 12.0
Check tolerance
cm3/1000S. : 16.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 106.5
Tolerance
cm3/1000 strokes : + - 2.0
Check tolerance
cm3/1000S. : + - 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : + - 0.75
Del. quantity
cm3/1000 strokes : 165.0
Tolerance
cm3/1000 strokes : + - 20.0
Check tolerance
cm3/1000S. : + - 25.0

LOW IDLE

Rated speed rpm : 475
Rack travel in mm : 5.50
Tolerance mm : + - 0.10
Del. quantity
cm3/1000 strokes : 22.0
Tolerance
cm3/1000 strokes : + - 2.0
Check tolerance
cm3/1000S. : + - 4.5
Spread
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.07.97
Test oil : ISO 4113

Combination No. : 0 402 646 665

Injection pump
Pump designation : PE6P130A720RS7354
EP type number : 0 412 636 835

Governor
Governor design. : RQV300...950PA1002
: -3K
Governor no. : 0 421 815 491

Cust. part No. :

Customer-spec. information
Customer : IVECO-FRANCE
Motor : 8210.42K.3000

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.05
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 12.00
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Check
tolerance °NW : + 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 11.95
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 242.0

Tolerance cm³/1000 strokes : + 1.0
 Check tolerance cm³/1000S. : + 4.0
 Spread
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0
 Rated speed rpm : 275
 Rack travel in mm : 5.30
 Tolerance mm : + 0.10
 Del. quantity cm³/1000 strokes : 32.0
 Tolerance cm³/1000 strokes : + 3.0
 Check tolerance cm³/1000S. : + 6.0
 Spread
 Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1025
 guide sleeve travel mm : 9.00
 Tolerance mm : + 0.15
 Rated speed rpm : 300
 guide sleeve travel mm : 1.64
 Tolerance mm : + 0.20
 Rated speed rpm : 764
 guide sleeve travel mm : 6.22
 Tolerance mm : + 0.25
 Rated speed rpm : 500
 guide sleeve travel mm : 3.78
 Tolerance mm : + 0.25
 Rated speed rpm : 1330

guide sleeve travel mm : 13.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever position degree : - 1
 Rated speed rpm : 1190
 Rack travel in mm : 11.00
 Tolerance mm : + 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950
 Aneroid pressure hPa : 1000
 Del. quantity cm³/1000 strokes : 242.0
 Tolerance cm³/1000 strokes : + 1.0
 Check tolerance cm³/1000S. : + 4.0
 Spread
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever position degree : 114.0
 tolerance degree : + 4.0
 RATED SPEED
 rack travel mm : 10.90
 Rated speed rpm : 1010
 Tolerance 1/min : + 5
 Check speed 1/min : + 10
 rack travel mm : 4.00
 Rated speed rpm : 1110
 Tolerance 1/min : + 15
 Check speed 1/min : + 20
 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1250

LOW IDLE**control lever**

position degree : 69.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 6.20

Testing:

Rated speed rpm : 275
rack travel mm : 5.30
Tolerance mm : \pm 0.10

Rated speed rpm : 355

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 11.95
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 11.75
Tolerance mm : \pm 0.10

Rated speed rpm : 550
rack travel mm : 11.30
Tolerance mm : \pm 0.10

Rated speed rpm : 300
rack travel mm : 10.80
Tolerance mm : \pm 0.30

ANEROID/ALTITUDE COMPENSATOR TEST**SETTING**

Rated speed rpm : 950
Pressure hPa : 1000
rack travel mm : 11.95
Tolerance mm : \pm 0.05

Rated speed rpm : 950
Pressure hPa : -
rack travel mm : 8.30
Tolerance mm : \pm 0.40

MEASUREMENT

Rated speed rpm : 950
Pressure hPa : 290
rack travel mm : 9.35
Tolerance mm : \pm 0.20

Pressure hPa : 500
rack travel mm : 11.10
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 180
Rated speed rpm : < 220

Check speed 1/min : > 160
Check speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1000
Rated speed rpm : 550
rack travel mm : 11.30
Tolerance mm : \pm 0.10
Del. quantity cm³/1000 strokes : 262.0
Tolerance cm³/1000 strokes : \pm 3.0
Check tolerance cm³/1000S. : \pm 6.0

Aneroid pressure hPa : -
Rated speed rpm : 550
Del. quantity cm³/1000 strokes : 171.0
Tolerance cm³/1000 strokes : \pm 1.0
Check tolerance cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity cm³/1000 strokes : 160.0
Tolerance cm³/1000 strokes : \pm 15.0

Check tolerance
cm³/1000S. : + 19.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 5.30

Tolerance mm : + 0.10

Del. quantity

cm³/1000 strokes : 32.0

Tolerance

cm³/1000 strokes : + 3.0

Check tolerance

cm³/1000S. : + 6.0

Spred

Tolerance

cm³/1000 strokes : 8.0

Check tolerance

cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 07.04.98
Test oil : ISO 4113

Combination No. : 0 402 646 667

Injection pump
Pump designation : PE6P120A320RS7412
EP type number : 0 412 626 953

Governor
Governor design. : RQV275...1000PA1278K
Governor no. : 0 421 815 509

Cust. part No. : 1310221/1

Customer-spec. information

Customer : DAF
Motor : XF 315 M
Power KW : 315.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + - 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : + - 0.1

Overflow quantity
min. L/h : 140
Tolerance L/h : + - 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + - 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 15.0
Tolerance bar : + - 1.0

Prestroke mm : 4.45
Tolerance mm : + - 0.05
Check
tolerance mm : + - 0.10

Rack travel in mm : 10.50
Tolerance mm : + - 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + - 0.50
Check
tolerance °NW : + - 0.75

Start of delivery mark

Tolerance : + - 0.10
Check
tolerance °NW : + - 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 13.40
Tolerance mm : + - 0.05

Det. quantity
cm³/1000 strokes : 318.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 3.80
Tolerance mm : + - 0.10

Det. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : + - 3.0

Check tolerance
cm³/1000S. : + - 6.0

Spred

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1077
guide sleeve

travel mm : 10.24
Tolerance mm : + - 0.15

Rated speed rpm : 275
guide sleeve

travel mm : 2.04
Tolerance mm : + - 0.20

Rated speed rpm : 704
guide sleeve

travel mm : 6.53
Tolerance mm : + - 0.25

Rated speed rpm : 400

guide sleeve
travel mm : 3.92
Tolerance mm : + - 0.25

Rated speed rpm : 1310
guide sleeve
travel mm : 13.50
Tolerance mm : + - 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1158

Rack travel in mm : 12.00
Tolerance mm : + - 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980
Aneroid pressure

hPa : 1500

Det. quantity
cm³/1000 strokes : 318.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 119.0
tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 12.40
Rated speed rpm : 1040

Tolerance 1/min : + - 5

Check
speed 1/min : + - 10

rack travel mm : 4.00
Rated speed rpm : 1145

Tolerance 1/min : + - 15

Check
speed 1/min : + - 20

rack travel mm : 0.50

Tolerance mm : \pm 0.50
Rated speed rpm : 1275

LOW IDLE

control lever position degree : 72.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

CRT mm min. : > 6.60

Testing:

Rated speed rpm : 275
rack travel mm : 3.80
Tolerance mm : \pm 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 980
rack travel mm : 13.40
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.35
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 13.05
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 12.55
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 12.05
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 13.40
Tolerance mm : \pm 0.10

Rated speed rpm : 980
rack travel mm : 13.80
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 980
Pressure hPa : 1500
rack travel mm : 13.40
Tolerance mm : \pm 0.05

Rated speed rpm : 980
Pressure hPa : -
rack travel mm : 8.55
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 980

Pressure hPa : 520
rack travel mm : 12.20
Tolerance mm : \pm 0.05

Pressure hPa : 210
rack travel mm : 9.80
Tolerance mm : \pm 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 342.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 13.05
Tolerance mm : \pm 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 195.0

Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0
Spred
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

LOW IDLE

Rated speed rpm : 275
Rack travel in mm : 3.80
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spred
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.04.98
Test oil : ISO 4113

Combination No. : 0 402 646 668

Injection pump
Pump designation : PE6P120A320RS7412
EP type number : 0 412 626 953

Governor
Governor design. : RQV275...1000PA1278
: -1K
Governor no. : 0 421 815 510

Cust. part No. : 1310220/1

Customer-spec. information
Customer : DAF
Motor : XF 280 M
Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + - 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : + - 0.1

Overflow quantity
min. l/h : 145
Tolerance l/h : + - 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + - 1.5

Test lines : 1 680 750 089
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 15.0
Tolerance bar : + - 1.0

Prestroke mm : 4.45
Tolerance mm : + - 0.05
Check tolerance mm : + - 0.10

Rack travel in mm : 10.50
Tolerance mm : + - 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + - 0.50
Check tolerance °NW : + - 0.75

Start of delivery mark

Tolerance : + - 0.10
Check tolerance °NW : + - 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 12.60

Tolerance mm : \pm 0.05
 Del. quantity cm³/1000 strokes : 303.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Spred
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0
 Rated speed rpm : 275
 Rack travel in mm : 3.90
 Tolerance mm : \pm 0.10
 Del. quantity cm³/1000 strokes : 17.0
 Tolerance cm³/1000 strokes : \pm 3.0
 Check tolerance cm³/1000S. : \pm 6.0
 Spred
 Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1062
 guide sleeve
 travel mm : 10.04
 Tolerance mm : \pm 0.15
 Rated speed rpm : 275
 guide sleeve
 travel mm : 2.04
 Tolerance mm : \pm 0.20
 Rated speed rpm : 697
 guide sleeve
 travel mm : 6.48
 Tolerance mm : \pm 0.25
 Rated speed rpm : 400

guide sleeve
 travel mm : 3.92
 Tolerance mm : \pm 0.25
 Rated speed rpm : 1310
 guide sleeve
 travel mm : 13.50
 Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1171
 Rack travel in mm : 10.70
 Tolerance mm : \pm 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
 Aneroid pressure hPa : 1500
 Del. quantity cm³/1000 strokes : 303.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Spred
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 118.0
 tolerance degree : \pm 4.0
RATED SPEED
 rack travel mm : 11.35
 Rated speed rpm : 1050
 Tolerance 1/min : \pm 5
 Check
 speed 1/min : \pm 10
 rack travel mm : 4.00
 Rated speed rpm : 1150
 Tolerance 1/min : \pm 15
 Check
 speed 1/min : \pm 20
 rack travel mm : 0.50

Tolerance mm : \pm 0.50
Rated speed rpm : 1275

LOW IDLE

control lever position degree : 71.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

CRT mm min. : > 6.50

Testing:

Rated speed rpm : 275
rack travel mm : 3.90
Tolerance mm : \pm 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 750
rack travel mm : 12.60
Tolerance mm : \pm 0.05

Rated speed rpm : 980
rack travel mm : 12.35
Tolerance mm : \pm 0.10

Rated speed rpm : 900
rack travel mm : 12.60
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 12.30
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 11.80
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 11.40
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 12.35
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 775
Pressure hPa : 1500
rack travel mm : 12.65
Tolerance mm : \pm 0.05

Rated speed rpm : 775
Pressure hPa : -
rack travel mm : 8.50
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 775

Pressure hPa : 450
rack travel mm : 12.10
Tolerance mm : \pm 0.05

Pressure hPa : 170
rack travel mm : 9.90
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 980
Del. quantity
cm³/1000 strokes : 272.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 12.60
Tolerance mm : \pm 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 184.0

Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0
Spred
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 3.90
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spred
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.04.98
Test oil : ISO 4113

Combination No. : 0 402 646 670

Injection pump
Pump designation : PE6P120A320RS7438
EP type number : 0 412 626 965

Governor
Governor design. : RQV275...1150PA1296K
Governor no. : 0 421 815 523

Cust. part No. : 1316183

Customer-spec. information

Customer : DAF
Motor : PF 235 M
Power KW : 230.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 150
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 15.0
Tolerance bar : + 1.0

Prestroke mm : 4.85
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.10
Check tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 13.50
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 259.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 16.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spred

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1201
guide sleeve
travel mm : 10.07
Tolerance mm : \pm 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 1.71
Tolerance mm : \pm 0.20

Rated speed rpm : 811
guide sleeve
travel mm : 6.79
Tolerance mm : \pm 0.25

Rated speed rpm : 450
guide sleeve
travel mm : 3.85
Tolerance mm : \pm 0.25

Rated speed rpm : 1480
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1321

Rack travel in mm : 12.25
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 259.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 119.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 12.20

Rated speed rpm : 1185
Tolerance 1/min : \pm 5

Check
speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1310

Tolerance 1/min : \pm 15
Check
speed 1/min : \pm 20

rack travel mm : 0.70
Tolerance mm : \pm 0.70
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 70.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

CRT mm min. : > 7.60

Testing:

Rated speed rpm : 275
rack travel mm : 5.00
Tolerance mm : \pm 0.10

Rated speed rpm : 395

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 13.50
Tolerance mm : \pm 0.05

Rated speed rpm : 1130
rack travel mm : 13.20
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 13.25
Tolerance mm : \pm 0.10

Rated speed rpm : 800
rack travel mm : 13.45
Tolerance mm : \pm 0.10

Rated speed rpm : 650
rack travel mm : 12.70
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 11.90
Tolerance mm : \pm 0.10

Rated speed rpm : 1150
rack travel mm : 13.20
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 875
Pressure hPa : 1500
rack travel mm : 13.50
Tolerance mm : \pm 0.10

Rated speed rpm : 875
Pressure hPa : -
rack travel mm : 9.15
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 875

Pressure hPa : 450
rack travel mm : 12.10
Tolerance mm : \pm 0.05

Pressure hPa : 150
rack travel mm : 9.70
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1130
Del. quantity
cm³/1000 strokes : 232.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 13.25
Tolerance mm : \pm 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 170.0

Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0
Spred
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

LOW IDLE

Rated speed rpm : 275
Rack travel in mm : 5.00
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spred
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.04.98
Test oil : ISO 4113

Combination No. : 0 402 646 671

Injection pump
Pump designation : PE6P120A320RS7421
EP type number : 0 412 626 956

Governor
Governor design. : RQV275...1150PA1297K
Governor no. : 0 421 815 524

Cust. part No. : 1316184/1

Customer-spec. information

Customer : DAF
Motor : PF 212 M
Power KW : 205.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 160
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 15.0
Tolerance bar : + 1.0

Prestroke mm : 4.85
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.10
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 12.35
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 231.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 4.90
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 16.0

Tolerance
cm³/1000 strokes : + - 3.0

Check tolerance
cm³/1000S. : + - 6.0

Spred

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1206
guide sleeve
travel mm : 10.12

Tolerance mm : + - 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 1.71

Tolerance mm : + - 0.20

Rated speed rpm : 813
guide sleeve
travel mm : 6.81

Tolerance mm : + - 0.25

Rated speed rpm : 450

guide sleeve
travel mm : 3.85
Tolerance mm : + - 0.25

Rated speed rpm : 1480
guide sleeve
travel mm : 13.50
Tolerance mm : + - 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1329

Rack travel in mm : 11.10
Tolerance mm : + - 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 231.0

Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : + - 4.0

RATED SPEED
rack travel mm : 11.10
Rated speed rpm : 1195

Tolerance 1/min : + - 5
Check

speed 1/min : + - 10
rack travel mm : 4.00

Rated speed rpm : 1300
Tolerance 1/min : + - 15

Check
speed 1/min : + - 20
rack travel mm : 0.70

Tolerance mm : + 0.70
Rated speed rpm : 1400

LOW IDLE

control lever position degree : 71.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 175
CRT mm min. : > 7.50

Testing:

Rated speed rpm : 275
rack travel mm : 4.90
Tolerance mm : + 0.10

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 12.35
Tolerance mm : + 0.05

Rated speed rpm : 1130
rack travel mm : 12.10
Tolerance mm : + 0.10

Rated speed rpm : 1000
rack travel mm : 12.15
Tolerance mm : + 0.10

Rated speed rpm : 800
rack travel mm : 12.25
Tolerance mm : + 0.10

Rated speed rpm : 650
rack travel mm : 11.50
Tolerance mm : + 0.10

Rated speed rpm : 500
rack travel mm : 10.85
Tolerance mm : + 0.10

Rated speed rpm : 1150
rack travel mm : 12.10
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 875
Pressure hPa : 1500
rack travel mm : 12.35
Tolerance mm : + 0.10

Rated speed rpm : 875
Pressure hPa : -
rack travel mm : 8.00
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 875
Pressure hPa : 420
rack travel mm : 11.35
Tolerance mm : + 0.05

Pressure hPa : 150
rack travel mm : 9.20
Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1130
Del. quantity
cm³/1000 strokes : 207.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 12.15
Tolerance mm : + 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 138.0

Tolerance
cm³/1000 strokes : +— 1.0
Check tolerance
cm³/1000S. : +— 4.0
Spred
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

LOW IDLE

Rated speed rpm : 275
Rack travel in mm : 4.90
Tolerance mm : +— 0.10
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : +— 3.0
Check tolerance
cm³/1000S. : +— 6.0
Spred
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.04.98
Test oil : ISO 4113

Combination No. : 0 402 646 673

Injection pump
Pump designation : PE6P120A320RS7412
EP type number : 0 412 626 953

Governor
Governor design. : RQV275...1000PA1300K
Governor no. : 0 421 815 527

Cust. part No. : 1315099

Customer-spec. information

Customer : DAF
Motor : XF 250 M
Power KW : 250.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 150
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 15.0
Tolerance bar : + 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.10
Check tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 12.00
Tolerance mm : + - 0.05

Del. quantity
cm³/1000 strokes : 289.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 3.90
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : + - 3.0

Check tolerance
cm³/1000S. : + - 6.0

Spred

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1072
guide sleeve
travel mm : 10.16
Tolerance mm : + - 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 2.04
Tolerance mm : + - 0.20

Rated speed rpm : 701
guide sleeve
travel mm : 6.52
Tolerance mm : + - 0.25

Rated speed rpm : 400
guide sleeve
travel mm : 3.92
Tolerance mm : + - 0.25

Rated speed rpm : 1310
guide sleeve
travel mm : 13.50
Tolerance mm : + - 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1181

Rack travel in mm : 10.00
Tolerance mm : + - 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 289.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : + - 4.0

RATED SPEED
rack travel mm : 10.50
Rated speed rpm : 1045

Tolerance 1/min : + - 5
Check
speed 1/min : + - 10

rack travel mm : 4.00
Rated speed rpm : 1140
Tolerance 1/min : + - 15
Check
speed 1/min : + - 20

rack travel mm : 0.70
Tolerance mm : \pm 0.70
Rated speed rpm : 1275

LOW IDLE

control lever
position degree : 70.0
tolerance degree : \pm 4.0
Setting point w/out bumper spring
Rated speed rpm : 175
CRT mm min. : > 6.50
Testing:
Rated speed rpm : 275
rack travel mm : 3.90
Tolerance mm : \pm 0.10
Rated speed rpm : 310

TORQUE CONTROL

Rated speed rpm : 750
rack travel mm : 12.00
Tolerance mm : \pm 0.05
Rated speed rpm : 980
rack travel mm : 11.50
Tolerance mm : \pm 0.10
Rated speed rpm : 900
rack travel mm : 11.70
Tolerance mm : \pm 0.10
Rated speed rpm : 700
rack travel mm : 12.00
Tolerance mm : \pm 0.10
Rated speed rpm : 600
rack travel mm : 11.40
Tolerance mm : \pm 0.10
Rated speed rpm : 500
rack travel mm : 10.90
Tolerance mm : \pm 0.10
Rated speed rpm : 1000
rack travel mm : 11.50
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 775
Pressure hPa : 1500
rack travel mm : 12.00
Tolerance mm : \pm 0.10
Rated speed rpm : 775
Pressure hPa : -
rack travel mm : 8.30
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 775
Pressure hPa : 460
rack travel mm : 11.00
Tolerance mm : \pm 0.05
Pressure hPa : 250
rack travel mm : 9.30
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 980
Del. quantity
cm³/1000 strokes : 250.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 11.70
Tolerance mm : \pm 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 188.0

Tolerance
cm³/1000 strokes : +— 1.0
Check tolerance
cm³/1000S. : +— 4.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 3.90
Tolerance mm : +— 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : +— 3.0
Check tolerance
cm³/1000S. : +— 6.0
Spred
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.04.98
Test oil : ISO 4113

Combination No. : 0 402 646 681

Injection pump
Pump designation : PE6P120A320RS7412
EP type number : 0 412 626 953

Governor
Governer design. : RQV275...1000PA1381K
Governer no. : 0 421 815 561

Cust. part No. : 1349846/0

Customer-spec. information

Customer : DAF
Motor : XF 250
Power KW : 250.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 15.0
Tolerance bar : + 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05

Rack travel in mm : 11.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.10
Check
tolerance °NW : + 0.70

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 11.50
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 250.0

Tolerance _____
cm³/1000 strokes : + 1.0

Check tolerance _____
cm³/1000S. : + 4.0

Spread _____

Tolerance _____
cm³/1000 strokes : 5.0

Check tolerance _____
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 3.90
Tolerance mm : + 0.10

Del. quantity _____
cm³/1000 strokes : 17.0

Tolerance _____
cm³/1000 strokes : + 3.0

Check tolerance _____
cm³/1000S. : + 6.0

Spread _____
Tolerance _____

cm³/1000 strokes : 8.0
Check tolerance _____

cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1055
guide sleeve _____

travel mm : 7.47
Tolerance mm : + 0.15

Rated speed rpm : 275
guide sleeve _____

travel mm : 2.04
Tolerance mm : + 0.20

Rated speed rpm : 820
guide sleeve _____

travel mm : 5.14
Tolerance mm : + 0.25

Rated speed rpm : 480
guide sleeve _____

travel mm : 3.34
Tolerance mm : + 0.25

Rated speed rpm : 1282
guide sleeve _____

travel mm : 12.00
Tolerance mm : + 0.25

Rated speed rpm : 1370
guide sleeve _____

travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1263

Rack travel in mm : 10.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980
Aneroid pressure _____

hPa : 1500
Del. quantity _____

cm³/1000 strokes : 250.0
Tolerance _____

cm³/1000 strokes : + 1.0
Check tolerance _____

cm³/1000S. : + 4.0
Spred _____

Tolerance _____
cm³/1000 strokes : 5.0

Check tolerance _____
cm³/1000S. : 9.0

CONTROL LEVER

control lever _____
position degree : 110.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.50
Rated speed rpm : 1045

Tolerance 1/min : + 5
Check _____

speed 1/min : + 10
rack travel mm : 4.00

Rated speed rpm : 1130
Tolerance 1/min : + 15

Check _____
speed 1/min : + 20
rack travel mm : 0.70

Tolerance mm : + 0.70
Rated speed rpm : 1275

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

CRT mm min. : > 7.00

Testing:

Rated speed rpm : 275
rack travel mm : 3.90
Tolerance mm : + 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 980
rack travel mm : 11.50
Tolerance mm : + 0.10

Rated speed rpm : 900
rack travel mm : 11.70
Tolerance mm : + 0.10

Rated speed rpm : 750
rack travel mm : 12.00
Tolerance mm : + 0.05

Rated speed rpm : 700
rack travel mm : 12.00
Tolerance mm : + 0.10

Rated speed rpm : 600
rack travel mm : 11.50
Tolerance mm : + 0.10

Rated speed rpm : 500
rack travel mm : 11.00
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 775
Pressure hPa : 1500

rack travel mm : 12.00
Tolerance mm : + - 0.10

Rated speed rpm : 775
Pressure hPa : 460
rack travel mm : 11.00
Tolerance mm : + - 0.05

MEASUREMENT

Rated speed rpm : 775

Pressure hPa : -
rack travel mm : 8.30
Tolerance mm : + - 0.20

Pressure hPa : 250
rack travel mm : 9.30
Tolerance mm : + - 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1500
Rated speed rpm : 750
rack travel mm : 12.00
Tolerance mm : + - 0.05

Del. quantity
cm³/1000 strokes : 289.0
Tolerance

cm³/1000 strokes : + - 2.0
Check tolerance

cm³/1000S. : + - 6.0
Spread

Tolerance
cm³/1000 strokes : 10.0
Check tolerance

cm³/1000S. : 15.0

Aneroid pressure

hPa : -
Rated speed rpm : 600
Del. quantity

cm³/1000 strokes : 188.0
Tolerance

cm³/1000 strokes : + - 1.0
Check tolerance

cm³/1000S. : + - 4.0
Spread

Tolerance
cm³/1000 strokes : 10.0
Check tolerance

cm³/1000S. : 15.0

LOW IDLE

Rated speed rpm : 275
Rack travel in mm : 3.90
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.03.95
Test oil : ISO 4113

Combination No. : 0 402 648 940

Injection pump
Pump designation : PE8P120A320LS7847-3
EP type number : 0 412 628 886

Governor
Governor design. : RQ300/950PA1032-11
Governor no. : 0 421 801 737

Cust. part No. : 0240740602

Customer-spec. information

Customer : MB-NFZ
Motor : OM402 LA
Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 8-7-2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.40
 Tolerance mm : \pm 0.05

 Del. quantity cm³/1000 strokes : 226.0

 Tolerance cm³/1000 strokes : \pm 1.0

 Check tolerance cm³/1000S. : \pm 4.0

 Spread

 Tolerance cm³/1000 strokes : 6.0

 Check tolerance cm³/1000S. : 9.0

 Rated speed rpm : 300

 Rack travel in mm : 5.50
 Tolerance mm : \pm 0.10
 Del. quantity cm³/1000 strokes : 13.0

 Tolerance cm³/1000 strokes : \pm 3.0

 Check tolerance cm³/1000S. : \pm 6.0

 Spread

 Tolerance cm³/1000 strokes : 6.0

 Check tolerance cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1005
 guide sleeve
 travel mm : 6.69
 Tolerance mm : \pm 0.10

 Rated speed rpm : 300
 guide sleeve
 travel mm : 1.63
 Tolerance mm : \pm 0.10

 Rated speed rpm : 950
 guide sleeve
 travel mm : 6.35
 Tolerance mm : \pm 0.10

Rated speed rpm : 800
 guide sleeve
 travel mm : 6.09
 Tolerance mm : \pm 0.10

 Rated speed rpm : 415
 guide sleeve
 travel mm : 3.72
 Tolerance mm : \pm 0.10

 Rated speed rpm : 550
 guide sleeve
 travel mm : 6.00
 Tolerance mm : \pm 0.10

 Rated speed rpm : 1160
 guide sleeve
 travel mm : 11.50
 Tolerance mm : \pm 0.50

 Rated speed rpm : 864
 guide sleeve
 travel mm : 6.26
 Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

control lever
 position degree : 109
 Rated speed rpm : 600

Rack travel in mm : 20.00
 Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
 Aneroid pressure hPa : 1200
 Del. quantity cm³/1000 strokes : 226.0

 Tolerance cm³/1000 strokes : \pm 1.0

 Check tolerance cm³/1000S. : \pm 4.0

 Spread

 Tolerance cm³/1000 strokes : 6.0

 Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 97.0
tolerance degree : + - 4.0

RATED SPEED
rack travel mm : 13.00
Rated speed rpm : 998
Tolerance 1/min : + - 8

rack travel mm : 4.00
Rated speed rpm : 1080
Tolerance 1/min : + - 15

rack travel mm : 0.75
Tolerance mm : + - 0.75
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 72.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : > 7.00

Testing:

Rated speed rpm : 300
rack travel mm : 5.50
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 405
Tolerance 1/min : + - 20

TORQUE CONTROL
Rated speed rpm : 550
rack travel mm : 14.40
Tolerance mm : + - 0.05

Rated speed rpm : 950
rack travel mm : 14.15
Tolerance mm : + - 0.10

Rated speed rpm : 870
rack travel mm : 14.30
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1200
rack travel mm : 14.40
Tolerance mm : + - 0.05

Rated speed rpm : 400
Pressure hPa : -
rack travel mm : 10.60
Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 400
Pressure hPa : 450
rack travel mm : 12.90
Tolerance mm : + - 0.10

Pressure hPa : 300
rack travel mm : 11.90
Tolerance mm : + - 0.15

Start interlock

Rated speed rpm : > 100
Rated speed rpm : > 220

Check
speed 1/min : > 80
Check
speed 1/min : > 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 216.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Rack travel mm : 14.30
Tolerance mm : + - 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 107.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : + - 10.0
Check tolerance
cm³/1000S. : + - 14.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 5.50
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.02.98
Test oil : ISO 4113

Combination No. : 0 402 746 633

Injection pump
Pump designation : PES6P120A720RS7366
EP type number : 0 412 726 933

Governor
Governor design. : RQ300/1050PA1344
Governor no. : 0 421 801 821

Cust. part No. :

Customer-spec. information

Customer : IVECO-FRANCE
Motor : 8460.41R.7143
Power KW : 214.0

TEST BENCH REQUIREMENTS

Inlet Line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 160
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery mark

Check tolerance °NW : + 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 11.55

Tolerance mm : + - 0.05
 Del. quantity cm³/1000 strokes : 234.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 4.0
 Spread
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0
 Rated speed rpm : 300
 Rack travel in mm : 6.30
 Tolerance mm : + - 0.10
 Del. quantity cm³/1000 strokes : 23.0
 Tolerance cm³/1000 strokes : + - 3.0
 Check tolerance cm³/1000S. : + - 6.0
 Spread
 Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree : 109
 Rated speed rpm : 500

Rack travel in mm : 20.00
 Tolerance mm : + - 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
 Aneroid pressure hPa : 1200

Del. quantity cm³/1000 strokes : 234.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 4.0
 Spread
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0
 RATED SPEED
 rack travel mm : 10.50
 Rated speed rpm : 1103
 Tolerance 1/min : + - 8
 Check speed 1/min : + - 13
 rack travel mm : 4.00
 Rated speed rpm : 1175
 Tolerance 1/min : + - 15
 Check speed 1/min : + - 20
 rack travel mm : 0.50
 Tolerance mm : + - 0.50
 Rated speed rpm : 1350

LOW IDLE

control lever position degree : 71.0
 tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 7.80

Testing:

Rated speed rpm : 300
 rack travel mm : 6.30
 Tolerance mm : + - 0.10

rack travel mm : 2.00
 Rated speed rpm : 395
 Tolerance 1/min : + - 20

TORQUE CONTROL
 Rated speed rpm : 1050
 rack travel mm : 11.55

Tolerance mm : + 0.05

Rated speed rpm : 425
rack travel mm : 12.75
Tolerance mm : + 0.10

Rated speed rpm : 500
rack travel mm : 12.75
Tolerance mm : + 0.10

Rated speed rpm : 700
rack travel mm : 12.50
Tolerance mm : + 0.15

Rated speed rpm : 875
rack travel mm : 11.90
Tolerance mm : + 0.15

Rated speed rpm : 425
rack travel mm : 13.30
Tolerance mm : + 0.40

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1200
rack travel mm : 12.75
Tolerance mm : + 0.10

Rated speed rpm : 600
Pressure hPa : -
rack travel mm : 9.60
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 600
Pressure hPa : 260
rack travel mm : 10.40
Tolerance mm : + 0.20

Pressure hPa : 420
rack travel mm : 12.00
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 250

Check speed 1/min : > 80

Check speed 1/min : < 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1200
Rated speed rpm : 500
rack travel mm : 12.75
Tolerance mm : + 0.10
Del. quantity cm³/1000 strokes : 245.0
Tolerance cm³/1000 strokes : + 4.0
Check tolerance cm³/1000S. : + 7.0

Aneroid pressure hPa : -
Rated speed rpm : 600
Del. quantity cm³/1000 strokes : 152.0
Tolerance cm³/1000 strokes : + 1.0
Check tolerance cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.60
Tolerance mm : + 0.30
Del. quantity cm³/1000 strokes : 105.0
Tolerance cm³/1000 strokes : + 15.0
Check tolerance cm³/1000S. : + 19.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 6.30
Tolerance mm : + 0.10
Del. quantity cm³/1000 strokes : 23.0
Tolerance cm³/1000 strokes : + 3.0
Check tolerance cm³/1000S. : + 6.0
Spread

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.04.98
Test oil : ISO 4113

Combination No. : 0 402 646 739

Injection pump
Pump designation : PE6P120A320LS7904-1
EP type number : 0 412 626 964

Governor
Governor design. : RQ750PA1326
Governor no. : 0 421 801 815

Cust. part No. : 04222 3926 KY

Customer-spec. information

Customer : KHD
Motor : BF6M1015/C
Power KW : 239.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 033

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 200
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.65
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 6- 3- 5- 2- 4-
: 1

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery blocking

°NW after s.o.d. : 300.00
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.40
Tolerance mm : + - 0.05

Del. quantity
cm³/1000 strokes : 365.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : + - 3.0

Check tolerance
cm³/1000S. : + - 6.0

Spred

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 745
guide sleeve
travel mm : 4.54
Tolerance mm : + - 0.15

Rated speed rpm : 300
guide sleeve
travel mm : 1.24
Tolerance mm : + - 0.20

Rated speed rpm : 860
guide sleeve
travel mm : 5.59
Tolerance mm : + - 0.10

Rated speed rpm : 271

guide sleeve
travel mm : 1.00
Tolerance mm : + - 0.10

Rated speed rpm : 560
guide sleeve
travel mm : 3.24
Tolerance mm : + - 0.10

Rated speed rpm : 1154
guide sleeve
travel mm : 12.00
Tolerance mm : + - 0.10

Rated speed rpm : 1230
guide sleeve
travel mm : 13.50
Tolerance mm : + - 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 365.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0
Spred
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 109.0
tolerance degree : + - 4.0

RATED SPEED

rack travel mm : 0.50
Tolerance mm : + - 0.50
Rated speed rpm : 900

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 11.40

Rated speed rpm : 780
Tolerance 1/min : + - 4

rack travel mm	:	4.50
rack travel mm	:	0.50
Tolerance mm	:	+ - 0.50
Rated speed rpm	:	900
Rated speed rpm	:	751
rack travel mm	:	11.40
Rated speed rpm	:	781
Tolerance 1/min	:	+ - 4
rack travel mm	:	4.50
rack travel mm	:	0.50
Tolerance mm	:	+ - 0.50
Rated speed rpm	:	752
rack travel mm	:	11.40
Rated speed rpm	:	782
Tolerance 1/min	:	+ - 4
rack travel mm	:	4.50
rack travel mm	:	0.50
Tolerance mm	:	+ - 0.50
Rated speed rpm	:	900
Rated speed rpm	:	753
rack travel mm	:	11.40
Rated speed rpm	:	783
Tolerance 1/min	:	+ - 4
rack travel mm	:	4.50
rack travel mm	:	0.50
Tolerance mm	:	+ - 0.50
Rated speed rpm	:	754
rack travel mm	:	11.40
Rated speed rpm	:	784
Tolerance 1/min	:	+ - 4
rack travel mm	:	4.50
rack travel mm	:	0.50
Tolerance mm	:	+ - 0.50
Rated speed rpm	:	900
Rated speed rpm	:	755
rack travel mm	:	11.40
Rated speed rpm	:	785
Tolerance 1/min	:	+ - 4
rack travel mm	:	4.50

rack travel mm	:	0.50
Tolerance mm	:	+ - 0.50

TORQUE CONTROL		
Rated speed rpm	:	700
rack travel mm	:	12.40
Tolerance mm	:	+ - 0.05

Start interlock

Rated speed rpm	:	> 100
Rated speed rpm	:	< 560

Check speed 1/min	:	> 80
Check speed 1/min	:	< 580

STARTING FUEL DELIVERY

Rated speed rpm	:	100
rack travel mm	:	20.25
Tolerance mm	:	+ - 0.75
Del. quantity cm ³ /1000 strokes	:	210.0
Tolerance cm ³ /1000 strokes	:	+ - 20.0
Check tolerance cm ³ /1000S.	:	+ - 24.0

LOW IDLE

Rated speed rpm	:	300
Del. quantity cm ³ /1000 strokes	:	20.0
Tolerance cm ³ /1000 strokes	:	+ - 3.0
Check tolerance cm ³ /1000S.	:	+ - 6.0
Spread Tolerance cm ³ /1000 strokes	:	8.0
Check tolerance cm ³ /1000S.	:	12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.04.98
Test oil : ISO 4113

Combination No. : 0 402 744 804

Injection pump
Pump designation : PES4P120A320RS7402
EP type number : 0 412 724 804

Governor
Governor design. : RQV275...1200PA1257K
Governor no. : 0 421 815 494

Cust. part No. : CCEP 5154A 66-238

Customer-spec. information

Customer : RENAULT V.I.
Motor : MIDR 04-02-26 A4
Power KW : 100.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + - 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Overflow quantity
min. l/h : 125
Tolerance l/h : + - 20.0

Test nozzle hole
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + - 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + - 1.0

Prestroke mm : 5.10
Tolerance mm : + - 0.05
Check
tolerance mm : + - 0.10

Rack travel in mm : 13.00
Tolerance mm : + - 0.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : + - 0.50
Check
tolerance °NW : + - 0.75

Start of delivery mark

°NW after s.o.d. : -0.30
Tolerance : + - 0.50
Check
tolerance °NW : + - 0.75

Barrel no. : 1

Beginning of delivery difference

betw. rack trav.
mm : 21.00
and maximum rack
travel : 13.00
Difference ° CS : 2.40

CRT ZERO POSITION

Rack travel in mm : 13.40
Tolerance mm : + - 0.05

BASIC SETTING

Rated speed rpm : 1200

Del. quantity
cm³/1000 strokes : 261.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : -8.90
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 33.0

Tolerance
cm³/1000 strokes : + - 2.0

Check tolerance
cm³/1000S. : + - 6.0

Spred

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

**(B) SETTING OF INJECTION PUMP
WITH GOVERNOR**

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1257
guide sleeve
travel mm : 9.18
Tolerance mm : + - 0.15

Rated speed rpm : 325
guide sleeve
travel mm : 1.52
Tolerance mm : + - 0.20

Rated speed rpm : 888
guide sleeve
travel mm : 6.57
Tolerance mm : + - 0.25

Rated speed rpm : 560
guide sleeve
travel mm : 4.01
Tolerance mm : + - 0.25

Rated speed rpm : 1650
guide sleeve
travel mm : 13.50
Tolerance mm : + - 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1473

Rack travel in mm : 12.40
Tolerance mm : + - 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 261.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0
Spred
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 296.0
tolerance degree : + - 4.0

RATED SPEED
rack travel mm : -1.00
Rated speed rpm : 1245

Tolerance 1/min	: + -	5
rack travel mm	:	-9.40
Rated speed rpm	:	1405
Tolerance 1/min	: + -	15
rack travel mm	:	-12.90
Tolerance mm	: + -	0.50
Rated speed rpm	:	1500

LOW IDLE

control lever position degree	:	250.0
tolerance degree	: + -	4.0

Setting point w/out bumper spring

Rated speed rpm	:	225
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CRT mm min.	: >	-7.40
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Testing:

Rated speed rpm	:	325
rack travel mm	:	-8.90
Tolerance mm	: + -	0.10

Rated speed rpm	:	390
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TORQUE CONTROL

Rated speed rpm	:	1200
Rated speed rpm	:	850
rack travel mm	:	-1.00
Tolerance mm	: + -	0.10

Rated speed rpm	:	700
rack travel mm	:	-6.00
Tolerance mm	: + -	0.20

Rated speed rpm	:	700
rack travel mm	:	-1.80
Tolerance mm	: + -	0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm	:	1200
Pressure hPa	:	1200

Rated speed rpm	:	1200
Pressure hPa	:	-
rack travel mm	:	-3.20
Tolerance mm	: + -	0.20

MEASUREMENT

Rated speed rpm	:	1200
Pressure hPa	:	200
rack travel mm	:	-2.40
Tolerance mm	: + -	0.20
Pressure hPa	:	440
rack travel mm	:	-1.10
Tolerance mm	: + -	0.05

Start interlock

Rated speed rpm	: >	130
Rated speed rpm	: <	275
Check speed 1/min	: >	110
Check speed 1/min	: <	285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa	:	1200
Rated speed rpm	:	850
Del. quantity cm ³ /1000 strokes	:	249.0
Tolerance cm ³ /1000 strokes	: + -	3.0
Check tolerance cm ³ /1000S.	: + -	6.0

Aneroid pressure hPa	:	-
Rated speed rpm	:	700
rack travel mm	:	-6.00
Tolerance mm	: + -	0.20
Del. quantity cm ³ /1000 strokes	:	153.0
Tolerance cm ³ /1000 strokes	: + -	8.0
Check tolerance cm ³ /1000S.	: + -	8.0

Aneroid pressure hPa	:	-
Rated speed rpm	:	1200

Del. quantity
cm³/1000 strokes : 183.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 100.0
Tolerance
cm³/1000 strokes : + - 15.0
Check tolerance
cm³/1000S. : + - 19.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : -8.90
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 33.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.04.98
Test oil : ISO 4113

Combination No. : 0 402 744 808

Injection pump
Pump designation : PES4P120A320RS7402
EP type number : 0 412 724 804

Governor
Governor design. : RQV275...1200PA1257
: -1K
Governor no. : 0 421 815 553

Cust. part No. : CCEP5166 66-238

Customer-spec. information

Customer : RENAULT V.I.
Motor : MIDR 04-02-26 A4
Power KW : 100.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Overflow quantity
min. l/h : 125
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.10
Tolerance mm : + 0.05

Check
tolerance mm : + 0.10

Rack travel in mm : 13.00
Tolerance mm : + 0.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : + 0.50

Check
tolerance °NW : + 0.75

Start of delivery mark

°NW after s.o.d. : -10.30
Tolerance : + 0.50

Check
tolerance °NW : + 0.75

Barrel no. : 1

Beginning of delivery difference

betw. rack trav.
mm : 21.00

and maximum rack
travel : 13.00

Difference ° CS : 2.40

CRT ZERO POSITION

Rack travel in mm : 13.40
Tolerance mm : \pm 0.05

BASIC SETTING

Rated speed rpm : 1200

Del. quantity
cm³/1000 strokes : 261.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : -8.90
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 33.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 6.0

Spred

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

**(B) SETTING OF INJECTION PUMP
WITH GOVERNOR**

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1257
guide sleeve
travel mm : 9.18
Tolerance mm : \pm 0.15

Rated speed rpm : 325
guide sleeve
travel mm : 1.52
Tolerance mm : \pm 0.20

Rated speed rpm : 888
guide sleeve
travel mm : 6.57
Tolerance mm : \pm 0.25

Rated speed rpm : 560
guide sleeve
travel mm : 4.01
Tolerance mm : \pm 0.25

Rated speed rpm : 1650
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1473

Rack travel in mm : 12.40
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 261.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spred
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 296.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : -1.00
Rated speed rpm : 1245

Tolerance 1/min	: +	5
rack travel mm	:	-9.40
Rated speed rpm	:	1405
Tolerance 1/min	: +	15
rack travel mm	:	-12.90
Tolerance mm	: +	0.50
Rated speed rpm	:	1500

LOW IDLE

control lever position degree	:	251.0
tolerance degree	: +	4.0

Setting point w/out bumper spring

Rated speed rpm	:	225
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CRT mm min.	:	> -7.40
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Testing:

Rated speed rpm	:	325
rack travel mm	:	-8.90
Tolerance mm	: +	0.10

Rated speed rpm	:	390
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TORQUE CONTROL

Rated speed rpm	:	1200
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Rated speed rpm	:	850
rack travel mm	:	-1.00
Tolerance mm	: +	0.10

Rated speed rpm	:	700
rack travel mm	:	-6.00
Tolerance mm	: +	0.20

Rated speed rpm	:	700
rack travel mm	:	-1.80
Tolerance mm	: +	0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm	:	1200
Pressure hPa	:	1200

Rated speed rpm	:	1200
Pressure hPa	:	-
rack travel mm	:	-3.20
Tolerance mm	: +	0.20

MEASUREMENT

Rated speed rpm	:	1200
Pressure hPa	:	200

rack travel mm	:	-2.40
Tolerance mm	: +	0.20

Pressure hPa	:	440
rack travel mm	:	-1.10
Tolerance mm	: +	0.05

Start interlock

Rated speed rpm	:	> 130
Rated speed rpm	:	< 275

Check speed 1/min	:	> 110
Check speed 1/min	:	< 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa	:	1200
Rated speed rpm	:	850
Del. quantity cm ³ /1000 strokes	:	249.0
Tolerance cm ³ /1000 strokes	: +	3.0
Check tolerance cm ³ /1000S.	: +	6.0

Aneroid pressure hPa	:	-
Rated speed rpm	:	700
rack travel mm	:	-6.00
Tolerance mm	: +	0.20
Del. quantity cm ³ /1000 strokes	:	153.0
Check tolerance cm ³ /1000S.	: +	8.0

Aneroid pressure hPa	:	-
Rated speed rpm	:	1200
Del. quantity cm ³ /1000 strokes	:	183.0

Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 100.0
Tolerance
cm³/1000 strokes : + - 15.0
Check tolerance
cm³/1000S. : + - 19.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : -8.90
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 33.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 6.0
Spred
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.04.98
Test oil : ISO 4113

Combination No. : 0 402 776 803

Injection pump
Pump designation : PES6P120A720LS7107
: -1

EP type number : 0 412 726 805

Governor
Governor design. : RSV350...750P0A520
: -1

Governor no. : 0 421 833 262

Cust. part No. :

Customer-spec. information

Customer : MB-NFZ
Motor : OM447 A
Power KW : 180.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 067

Outside diameter : 6.0
x inside diameter : 1.5
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05

Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 0.50

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
: -300

Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 14.85
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 225.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.60
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : + - 3.0

Check tolerance
cm³/1000S. : + - 6.0

Spred

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : + - 0.35

governor spring
pre-tension
click setting x : 2.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 225.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 77.0
tolerance degree : + - 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 13.80

Rated speed rpm : 785
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 850

Rated speed rpm : 751
rack travel mm : 13.80

Rated speed rpm : 786
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 850

Rated speed rpm : 752
rack travel mm : 13.80

Rated speed rpm : 787
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 850

Rated speed rpm : 753
rack travel mm : 13.80

Rated speed rpm : 788
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 850

Rated speed rpm : 754
rack travel mm : 13.80

Rated speed rpm : 789
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 850

Rated speed rpm : 755
rack travel mm : 13.80

Rated speed rpm : 790
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 850

LOW IDLE

control lever
position degree : 62.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.60
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 380
Tolerance 1/min : + 30

SET IDLE AUXILIARY SPRING

Rated speed rpm : 100
rack travel mm : 2.00

TORQUE CONTROL
Rated speed rpm : 700
rack travel mm : 14.85
Tolerance mm : + 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 19.50
Tolerance mm : + 0.30
Del. quantity
cm³/1000 strokes : 240.0
Tolerance
cm³/1000 strokes : + 10.0
Check tolerance
cm³/1000S. : + 14.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.60
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.04.98
Test oil : ISO 4113

Combination No. : 0 402 066 710

Injection pump
Pump designation : PES6P110A120RS3357
EP type number : 0 412 016 754

Governor
Governor design. : RSV400...900P4A633
Governor no. : 0 421 833 541

Cust. part No. : 3934780

Customer-spec. information

Customer : CDC
Motor : 6CTA ELITE
Power KW : 207.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Prestroke mm : 3.60
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

Start of delivery blocking

°NW after s.o.d. : 7.25
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.35
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 213.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 3.0

Spred

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 400

Rack travel in mm : 6.20
Tolerance mm : + - 0.20

Del. quantity
cm³/1000 strokes : 24.0

Tolerance
cm³/1000 strokes : + - 2.0

Check tolerance
cm³/1000S. : + - 4.5

Spred

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + - 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900

Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 213.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 3.0
Spred
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 102.0
tolerance degree : + - 4.0

RATED SPEED
rack travel mm : 12.30
Rated speed rpm : 960

Tolerance 1/min : + - 5
Check
speed 1/min : + - 10

rack travel mm : 6.40
Rated speed rpm : 990
Tolerance 1/min : + - 5
Check
speed 1/min : + - 10

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1100

rack travel mm : 6.40
Rated speed rpm : 990
Tolerance 1/min : + - 15
Check
speed 1/min : + - 20

LOW IDLE

control lever
position degree : 77.0
tolerance degree : + - 4.0

Control lever difference
Grad : 25.0
tolerance degree : + - 6.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 5.70
Tolerance mm : + - 0.10

Rated speed rpm : 100
CRT mm min. : < 19.00

Testing:

Rated speed rpm : 400
rack travel mm : 6.20
Tolerance mm : + - 0.20

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 13.35
Tolerance mm : + - 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : + - 0.50
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : + - 20.0
Check tolerance
cm³/1000S. : + - 25.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 6.20
Tolerance mm : + - 0.20
Del. quantity
cm³/1000 strokes : 24.0
Tolerance
cm³/1000 strokes : + - 2.0
Check tolerance
cm³/1000S. : + - 4.5
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.04.98
Test oil : ISO 4113

Combination No. : F 002 A0Z 079

Injection pump
Pump designation : PES4A95D320/3RS2952
EP type number : F 002 A10 030

Governor
Governer design. : RQV475...1250AB1329R
Governer no. : F 002 A30 004

Cust. part No. : 3933691

Customer-spec. information

Customer : CDC
Motor : 4BNA
Power KW : 59.6

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery blocking

°NW after s.o.d. : 8.50
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.00
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 87.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 475

Rack travel in mm : 5.35
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 15.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1310

guide sleeve
travel mm : 8.60
Tolerance mm : + 0.15

Rated speed rpm : 475

guide sleeve
travel mm : 1.90
Tolerance mm : + 0.20

Rated speed rpm : 930

guide sleeve
travel mm : 5.25
Tolerance mm : + 0.25

Rated speed rpm : 630

guide sleeve
travel mm : 3.30
Tolerance mm : + 0.25

Rated speed rpm : 1630

guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure

hPa : -

Del. quantity

cm³/1000 strokes : 87.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever

position degree : 100.0

tolerance degree : + 6.0

RATED SPEED

rack travel mm : 9.00

Rated speed rpm : 1300

Tolerance 1/min : + 15

rack travel mm : 4.00

Rated speed rpm : 1390

Tolerance 1/min : + 5

rack travel mm : 0.50

Tolerance mm : + 0.50

Rated speed rpm : 1475

LOW IDLE

control lever

position degree : 70.0

tolerance degree : + 6.0

Control lever difference

Grad : 30.0

tolerance degree : + 6.0

Setting point w/out bumper spring

Rated speed rpm : 400

CRT mm min. : > 7.00

Testing:

Rated speed rpm : 475
rack travel mm : 5.35
Tolerance mm : + - 0.10

Rated speed rpm : 550

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 10.00
Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 385

Check speed 1/min : > 80
Check speed 1/min : < 395

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + - 0.50
Del. quantity cm3/1000 strokes : 120.0
Tolerance cm3/1000 strokes : + - 10.0
Check tolerance cm3/1000S. : + - 15.0

LOW IDLE

Rated speed rpm : 475

Rack travel in mm : 5.35
Tolerance mm : + - 0.10
Del. quantity cm3/1000 strokes : 15.0
Tolerance cm3/1000 strokes : + - 2.0
Check tolerance cm3/1000S. : + - 4.5
Spread

Tolerance cm3/1000 strokes : 3.5
Check tolerance cm3/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.05.98
Test oil : ISO 4113

Combination No. : 0 402 086 704

Injection pump
Pump designation : PES6P100B321RS3388
EP type number : 0 412 006 714

Governor
Governor design. : RSV400...1125P0A693
Governor no. : 0 421 833 616

Cust. part No. : 51.11103-7607

Customer-spec. information

Customer : MAN
Motor : D0826 LE531
Power KW : 191.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 150
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.30
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 13.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery blocking

Tolerance : + 0.10
Check tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 925

Rack travel in mm : 14.10
 Tolerance mm : + - 0.05
 Del. quantity cm³/1000 strokes : 174.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 4.0
 Spread
 Tolerance cm³/1000 strokes : 4.0
 Check tolerance cm³/1000S. : 6.0

Rated speed rpm : 400
 Rack travel in mm : 4.90
 Tolerance mm : + - 0.10
 Del. quantity cm³/1000 strokes : 25.0
 Tolerance cm³/1000 strokes : + - 3.0
 Check tolerance cm³/1000S. : + - 6.0
 Spread
 Tolerance cm³/1000 strokes : 3.5
 Check tolerance cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree : - 3
 Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : + - 0.20
 governor spring pre-tension click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 925
 Aneroid pressure hPa : 1500
 Del. quantity cm³/1000 strokes : 174.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 4.0
 Spread
 Tolerance cm³/1000 strokes : 4.0
 Check tolerance cm³/1000S. : 6.0

CONTROL LEVER

control lever position degree : 104.0
 tolerance degree : + - 4.0

RATED SPEED
 rack travel mm : 12.60
 Rated speed rpm : 1175
 Tolerance 1/min : + - 5

rack travel mm : 4.00
 Rated speed rpm : 1265
 Tolerance 1/min : + - 15

rack travel mm : 0.85
 Tolerance mm : + - 0.55
 Rated speed rpm : 1400

rack travel mm : 4.00
 Rated speed rpm : 1270
 Tolerance 1/min : + - 15

LOW IDLE

control lever position degree : 80.0
 tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
 rack travel mm : 4.40
 Tolerance mm : + - 0.10

Testing:

Rated speed rpm	:	400
rack travel mm	:	4.90
Tolerance mm	:	+ - 0.10
rack travel mm	:	2.00
Rated speed rpm	:	500
Tolerance 1/min	:	+ - 30

TORQUE CONTROL

Rated speed rpm	:	925
rack travel mm	:	14.10
Tolerance mm	:	+ - 0.05
Rated speed rpm	:	1125
rack travel mm	:	13.60
Tolerance mm	:	+ - 0.05
Rated speed rpm	:	700
rack travel mm	:	14.15
Tolerance mm	:	+ - 0.10
Rated speed rpm	:	1025
rack travel mm	:	13.95
Tolerance mm	:	+ - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm	:	500
Pressure hPa	:	1500
rack travel mm	:	14.10
Tolerance mm	:	+ - 0.15
Rated speed rpm	:	500
Pressure hPa	:	-
rack travel mm	:	9.45
Tolerance mm	:	+ - 0.15

MEASUREMENT

Rated speed rpm	:	500
Pressure hPa	:	150
rack travel mm	:	9.75
Tolerance mm	:	+ - 0.05
Pressure hPa	:	800
rack travel mm	:	13.05
Tolerance mm	:	+ - 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure	:	
hPa	:	1500
Rated speed rpm	:	1125
Del. quantity	:	
cm ³ /1000 strokes	:	161.0
Tolerance	:	
cm ³ /1000 strokes	:	+ - 3.0
Check tolerance	:	
cm ³ /1000S.	:	+ - 6.0

Aneroid pressure	:	
hPa	:	1500
Rated speed rpm	:	700
rack travel mm	:	14.15
Tolerance mm	:	+ - 0.10
Del. quantity	:	
cm ³ /1000 strokes	:	187.0
Tolerance	:	
cm ³ /1000 strokes	:	+ - 3.0
Check tolerance	:	
cm ³ /1000S.	:	+ - 6.0

Aneroid pressure	:	
hPa	:	-
Rated speed rpm	:	500
Del. quantity	:	
cm ³ /1000 strokes	:	91.0
Tolerance	:	
cm ³ /1000 strokes	:	+ - 1.0
Check tolerance	:	
cm ³ /1000S.	:	+ - 4.0

STARTING FUEL DELIVERY

Rated speed rpm	:	100
rack travel mm	:	9.45
Tolerance mm	:	+ - 0.45
Del. quantity	:	
cm ³ /1000 strokes	:	112.0
Tolerance	:	
cm ³ /1000 strokes	:	+ - 10.0
Check tolerance	:	
cm ³ /1000S.	:	+ - 14.0

LOW IDLE

Rated speed rpm	:	400
Rack travel in mm	:	4.90
Tolerance mm	:	+ - 0.10

Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : +— 3.0
Check tolerance
cm³/1000S. : +— 6.0
Spred
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.05.98
Test oil : ISO 4113

Combination No. : 0 402 086 705

Injection pump
Pump designation : PES6P100B321RS3388
EP type number : 0 412 006 714

Governor
Governor design. : RSV400...1125P0A694
Governor no. : 0 421 833 617

Cust. part No. : 51.10100-7606

Customer-spec. information

Customer : MAN
Motor : D0826 LE527
Power KW : 169.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 150
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.30
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 13.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery blocking

Tolerance : + 0.10
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 925

Rack travel in mm : 13.90
 Tolerance mm : \pm 0.05
 Del. quantity cm³/1000 strokes : 166.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Spreed
 Tolerance cm³/1000 strokes : 4.0
 Check tolerance cm³/1000S. : 6.0

Rated speed rpm : 400
 Rack travel in mm : 4.80
 Tolerance mm : \pm 0.10
 Del. quantity cm³/1000 strokes : 25.0
 Tolerance cm³/1000 strokes : \pm 3.0
 Check tolerance cm³/1000S. : \pm 6.0
 Spreed
 Tolerance cm³/1000 strokes : 3.5
 Check tolerance cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree : - 3
 Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : \pm 0.20
 governor spring pre-tension
 click setting x : 5.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 925
 Aneroid pressure hPa : 1500
 Del. quantity cm³/1000 strokes : 166.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Spreed
 Tolerance cm³/1000 strokes : 4.0
 Check tolerance cm³/1000S. : 6.0

CONTROL LEVER

control lever position degree : 104.4
 tolerance degree : \pm 4.0
RATED SPEED
 rack travel mm : 12.10
 Rated speed rpm : 1175
 Tolerance 1/min : \pm 5
 rack travel mm : 4.00
 Rated speed rpm : 1260
 Tolerance 1/min : \pm 15
 rack travel mm : 0.85
 Tolerance mm : \pm 0.55
 Rated speed rpm : 1400
 rack travel mm : 4.00
 Rated speed rpm : 1265
 Tolerance 1/min : \pm 15

LOW IDLE

control lever position degree : 80.0
 tolerance degree : \pm 4.0
 Setting point w/out bumper spring
 Rated speed rpm : 400
 rack travel mm : 4.30
 Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 400
rack travel mm : 4.80
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 500
Tolerance 1/min : + - 30

TORQUE CONTROL

Rated speed rpm : 925
rack travel mm : 13.90
Tolerance mm : + - 0.05

Rated speed rpm : 1125
rack travel mm : 13.10
Tolerance mm : + - 0.10

Rated speed rpm : 700
rack travel mm : 14.00
Tolerance mm : + - 0.10

Rated speed rpm : 1000
rack travel mm : 13.70
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 14.00
Tolerance mm : + - 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.50
Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 150
rack travel mm : 10.00
Tolerance mm : + - 0.05

Pressure hPa : 800
rack travel mm : 13.20
Tolerance mm : + - 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1125
Del. quantity
cm³/1000 strokes : 143.5
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 700
rack travel mm : 14.00
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 177.5
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 88.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.50
Tolerance mm : + - 0.20
Del. quantity
cm³/1000 strokes : 112.0
Tolerance
cm³/1000 strokes : + - 10.0
Check tolerance
cm³/1000S. : + - 14.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 4.80
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spred
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.05.98
Test oil : ISO 4113

Combination No. : 0 402 646 955

Injection pump
Pump designation : PE6P120A320LS7834-1
EP type number : 0 412 626 857

Governor
Governor design. : RQV350...1050PA866
: -13
Governor no. : 0 421 813 954

Cust. part No. :

Customer-spec. information

Customer : MB-NFZ
Motor : OM401 LA
Power KW : 230.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Overflow quantity
min. l/h : 110
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.55
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 6- 3- 5- 2- 4-
: 1

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.10
Check tolerance °NW : + 0.75

Barrel no. : 6

CRT ZERO POSITION

Rack travel in mm : 14.70
Tolerance mm : + 0.10

BASIC SETTINGRated speed rpm : 600

Rack travel in mm : 14.70
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 223.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.40
Tolerance mm : + 0.10Del. quantity
cm³/1000 strokes : 19.0Tolerance
cm³/1000 strokes : + 3.0Check tolerance
cm³/1000S. : + 6.0

Spred

Tolerance
cm³/1000 strokes : 6.0Check tolerance
cm³/1000S. : 10.0

**(B) SETTING OF INJECTION PUMP
WITH GOVERNOR**

GUIDE SLEEVE TRAVELRated speed rpm : 1200
guide sleeve
travel mm : 8.75
Tolerance mm : + 0.25Rated speed rpm : 350
guide sleeve
travel mm : 1.50

Tolerance mm : + 0.10

guide sleeve
travel mm : 4.10
Tolerance mm : + 0.20guide sleeve
travel mm : 7.00
Tolerance mm : + 0.20

GUIDE SLEEVE POSITIONcontrol lever
position degree : - 1
Rated speed rpm : 1130Rack travel in mm : 17.25
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOPRated speed rpm : 600
Aneroid pressure

hPa : 900

Del. quantity
cm³/1000 strokes : 223.0Tolerance
cm³/1000 strokes : + 1.0Check tolerance
cm³/1000S. : + 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0Check tolerance
cm³/1000S. : 9.0

CONTROL LEVERcontrol lever
position degree : 121.0
tolerance degree : + 4.0**RATED SPEED**rack travel mm : 13.90
Rated speed rpm : 1095
Tolerance 1/min : + 5rack travel mm : 4.00
Rated speed rpm : 1175
Tolerance 1/min : + 15rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 67.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 7.30

Testing:

Rated speed rpm : 350
rack travel mm : 5.40
Tolerance mm : + - 0.10

Rated speed rpm : 475

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 14.70
Tolerance mm : + - 0.10

Rated speed rpm : 1050
rack travel mm : 14.90
Tolerance mm : + - 0.10

Rated speed rpm : 800
rack travel mm : 15.30
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

2-stage LDA setting

Rated speed rpm : 600
Pressure hPa : 900

MEASUREMENT

Pressure hPa : 300
rack travel mm : -3.10
Tolerance mm : + - 0.05

Pressure hPa : 600
rack travel mm : -1.10
Tolerance mm : + - 0.10

Pressure hPa : 1350

rack travel mm : 0.20
Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 270

Check speed 1/min : > 80
Check speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1800
Rated speed rpm : 1050
Del. quantity cm³/1000 strokes : 235.5
Tolerance cm³/1000 strokes : + - 1.5
Check tolerance cm³/1000S. : + - 4.5
Spread
Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000S. : 12.0

Aneroid pressure
hPa : 1800
Rated speed rpm : 800
rack travel mm : 15.30
Tolerance mm : + - 0.10
Del. quantity cm³/1000 strokes : 243.0
Tolerance cm³/1000 strokes : + - 2.0
Check tolerance cm³/1000S. : + - 5.0
Spread
Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 133.0
Tolerance cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + 4.0
Spred
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

REDUCED QUANTITY

Aneroid pressure
hPa : 1800
Rated speed rpm : 1050
rack travel mm : 12.60
Tolerance mm : + 0.20
Del. quantity
cm³/1000 strokes : 177.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0
Spred
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 260.0
Tolerance
cm³/1000 strokes : + 10.0
Check tolerance
cm³/1000S. : + 14.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.40
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spred
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 06.05.98
Test oil : ISO 4113

Combination No. : 0 402 648 931

Injection pump
Pump designation : PE8P120A320LS7847-2
EP type number : 0 412 628 885

Governor
Governor design. : RG300/950PA1032-10
Governor no. : 0 421 801 735

Cust. part No. : 0230741302

Customer-spec. information

Customer : MB-NFZ
Motor : OM402 LA
Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.55
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.10
Check tolerance °NW : + 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.80
 Tolerance mm : \pm 0.05
 Del. quantity cm³/1000 strokes : 239.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Spread
 Tolerance cm³/1000 strokes : 6.0
 Check tolerance cm³/1000S. : 9.0
 Rated speed rpm : 300
 Rack travel in mm : 5.70
 Tolerance mm : \pm 0.10
 Del. quantity cm³/1000 strokes : 13.0
 Tolerance cm³/1000 strokes : \pm 3.0
 Check tolerance cm³/1000S. : \pm 6.0
 Spread
 Tolerance cm³/1000 strokes : 6.0
 Check tolerance cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1005
 guide sleeve
 travel mm : 6.84
 Tolerance mm : \pm 0.10
 Rated speed rpm : 300
 guide sleeve
 travel mm : 1.74
 Tolerance mm : \pm 0.10
 Rated speed rpm : 950
 guide sleeve
 travel mm : 6.50
 Tolerance mm : \pm 0.10

Rated speed rpm : 736
 guide sleeve
 travel mm : 6.13
 Tolerance mm : \pm 0.10
 Rated speed rpm : 415
 guide sleeve
 travel mm : 3.82
 Tolerance mm : \pm 0.10
 Rated speed rpm : 550
 guide sleeve
 travel mm : 6.00
 Tolerance mm : \pm 0.10
 Rated speed rpm : 1160
 guide sleeve
 travel mm : 11.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 833
 guide sleeve
 travel mm : 6.38
 Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

control lever
 position degree : 109
 Rated speed rpm : 600

Rack travel in mm : 20.00
 Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
 Aneroid pressure hPa : 1200
 Del. quantity cm³/1000 strokes : 239.0
 Tolerance cm³/1000 strokes : \pm 1.0
 Check tolerance cm³/1000S. : \pm 4.0
 Spread
 Tolerance cm³/1000 strokes : 6.0
 Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 97.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 13.00
Rated speed rpm : 998

Tolerance 1/min : \pm 8

Check

speed 1/min : \pm 13

rack travel mm : 4.00

Rated speed rpm : 1085

Tolerance 1/min : \pm 15

Check

speed 1/min : \pm 20

rack travel mm : 0.75

Tolerance mm : \pm 0.75

Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 7.50

Testing:

Rated speed rpm : 300
rack travel mm : 5.70
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 420
Tolerance 1/min : \pm 20

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 14.80
Tolerance mm : \pm 0.05

Rated speed rpm : 950
rack travel mm : 14.15
Tolerance mm : \pm 0.10

Rated speed rpm : 860
rack travel mm : 14.35

Tolerance mm : \pm 0.10

Rated speed rpm : 820
rack travel mm : 14.65
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1200
rack travel mm : 14.80
Tolerance mm : \pm 0.05

Rated speed rpm : 400
Pressure hPa : -
rack travel mm : 10.60
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 400
Pressure hPa : 450
rack travel mm : 12.90
Tolerance mm : \pm 0.10

Pressure hPa : 300
rack travel mm : 11.90
Tolerance mm : \pm 0.15

Start interlock

Rated speed rpm : > 100
Rated speed rpm : > 220

Check
speed 1/min : > 80
Check
speed 1/min : > 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 216.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spread

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Rack travel mm : 14.35
Tolerance mm : + - 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 107.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 220.0
Tolerance
cm³/1000 strokes : + - 10.0
Check tolerance
cm³/1000S. : + - 14.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 5.70
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 04.05.98
Test oil : ISO 4113

Combination No. : 0 402 666 804

Injection pump
Pump designation : PE6P120A320/3LS7893
EP type number : 0 412 626 952

Governor
Governor design. : RSV600...1050POA636
Governor no. : 0 421 833 544

Cust. part No. : 0270743902

Customer-spec. information

Customer : MB-NFZ
Motor : OM 441 LA
Power KW : 285.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 120
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x Length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.75
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 6- 3- 5- 2- 4-
: 1

Phasing : 0-45-120-165-240
: -285

Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.10
Check
tolerance °NW : + 0.75

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 1075

Rack travel in mm : 13.70
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 251.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 600

Rack travel in mm : 2.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 1.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1075

Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 251.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 86.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 12.70
Rated speed rpm : 1115
Tolerance 1/min : \pm 5

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1070
rack travel mm : 12.70

Rated speed rpm : 1102
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

Rated speed rpm : 1071
rack travel mm : 12.70

Rated speed rpm : 1103
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

Rated speed rpm : 1072
rack travel mm : 12.70

Rated speed rpm : 1104
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1300

Rated speed rpm : 1073
rack travel mm : 12.70

Rated speed rpm : 1105
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1300

rack travel mm : 12.70

rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55

rack travel mm : 12.70

rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55

LOW IDLE

control lever
position degree : 71.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 600
rack travel mm : 2.00
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 630
Tolerance 1/min : + - 30

TORQUE CONTROL
Rated speed rpm : 1075
rack travel mm : 13.70
Tolerance mm : + - 0.05

Rated speed rpm : 800
rack travel mm : 14.75
Tolerance mm : + - 0.10

Rated speed rpm : 1000
rack travel mm : 14.35
Tolerance mm : + - 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 14.75
Tolerance mm : + - 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.20
Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 250
rack travel mm : 9.60
Tolerance mm : + - 0.05

Pressure hPa : 400
rack travel mm : 11.20
Tolerance mm : + - 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 291.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0

Rack travel mm : 14.35
Tolerance mm : + - 0.15

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 270.0
Tolerance
cm³/1000 strokes : + - 15.0
Check tolerance
cm³/1000S. : + - 19.0

LOW IDLE

Rated speed rpm : 600
Rack travel in mm : 2.00
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.05.98
Test oil : ISO 4113

Combination No. : 0 402 676 839

Injection pump
Pump designation : PE6P120A320LS7898
EP type number : 0 412 626 957

Governor
Governor design. : RSV350...850POA683
Governor no. : 0 421 833 602

Cust. part No. : 0280743102

Customer-spec. information

Customer : MB-NFZ
Motor : OM441 A
Power KW : 165.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 220
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 6- 3- 5- 2- 4-
: 1

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.10
Check tolerance °NW : + 0.75

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 12.70
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 191.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spred

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

Rated speed rpm : 350

Rack travel in mm : 5.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spred

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 3.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 191.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spred

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

CONTROL LEVER

control lever
position degree : 89.0
tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 875
rack travel mm : 11.70

Rated speed rpm : 940
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1050

Rated speed rpm : 876
rack travel mm : 11.70

Rated speed rpm : 941
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1050

Rated speed rpm : 877
rack travel mm : 11.70

Rated speed rpm : 942
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1050

Rated speed rpm : 878
rack travel mm : 11.70

Rated speed rpm : 943
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1050

Rated speed rpm : 879
rack travel mm : 11.70

Rated speed rpm : 944
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1050

Rated speed rpm : 880
rack travel mm : 11.70

Rated speed rpm : 945
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1050

LOW IDLE

control lever
position degree : 73.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 350
rack travel mm : 5.20
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 395

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL
Rated speed rpm : 850
rack travel mm : 12.70
Tolerance mm : + 0.05

Rated speed rpm : 600
rack travel mm : 12.70
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 12.70
Tolerance mm : + 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.00
Tolerance mm : + 0.15

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 380
rack travel mm : 11.60
Tolerance mm : + 0.20

Pressure hPa : 450
rack travel mm : 12.50
Tolerance mm : + 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : + 3.0

Check tolerance : +
cm3/1000S. : +
Spred
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

End of test specification sheet

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 145.0
Tolerance
cm3/1000 strokes : +
Check tolerance
cm3/1000S. : +
Spred
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 190.0
Tolerance
cm3/1000 strokes : +
Check tolerance
cm3/1000S. : +
10.0 14.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.20
Tolerance mm : +
0.10
Del. quantity
cm3/1000 strokes : 19.0
Tolerance
cm3/1000 strokes : +
3.0
Check tolerance
cm3/1000S. : +
6.0
Spred
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 05.05.98
Test oil : ISO 4113

Combination No. : 0 402 678 827

Injection pump
Pump designation : PE8P120A321 8886
EP type number : 0 412 628 900

Governor
Governor design. : RSV550...850POA574
: -1
Governor no. : 0 421 833 476

Cust. part No. : 0260741102

Customer-spec. information

Customer : MB-NFZ
Motor : OM442LA
Power KW : 329.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 120
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x Length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.05
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50
Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.10
Check
tolerance °NW : + 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 830

Rack travel in mm : 15.40
Tolerance mm : + - 0.05

Del. quantity
cm³/1000 strokes : 264.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spred

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 550

Rack travel in mm : 3.90
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : + - 3.0

Check tolerance
cm³/1000S. : + - 6.0

Spred

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + - 0.20

governor spring
pre-tension
click setting x : 1.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 830
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 264.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spred

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 84.0
tolerance degree : + - 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 870
rack travel mm : 14.40

Rated speed rpm : 920
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1050

Rated speed rpm : 871
rack travel min : 14.40

Rated speed rpm : 921
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1050

Rated speed rpm : 872
rack travel mm : 14.40

Rated speed rpm : 922
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1050

Rated speed rpm : 873
rack travel mm : 14.40

Rated speed rpm : 923
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1050

Rated speed rpm : 874
rack travel mm : 14.40

Rated speed rpm : 924
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1050

Rated speed rpm : 875
rack travel mm : 14.40

Rated speed rpm : 925
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 1050

LOW IDLE

control lever position degree : 72.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 550
rack travel mm : 3.90
Tolerance mm : + - 0.10

N01

rack travel mm : 2.00
Rated speed rpm : 560
Tolerance 1/min : + - 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL
Rated speed rpm : 830
rack travel mm : 15.40
Tolerance mm : + - 0.05

Rated speed rpm : 600
rack travel mm : 15.40
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 15.40
Tolerance mm : + - 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.30
Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 500
rack travel mm : 12.35
Tolerance mm : + - 0.20

Pressure hPa : 710
rack travel mm : 14.30
Tolerance mm : + - 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1200
Rated speed rpm : 600
Del. quantity cm³/1000 strokes : 283.0
Tolerance cm³/1000 strokes : + - 3.0

Check tolerance : + 6.0
cm³/1000S.
Spred
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 174.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spred
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 275.0
Tolerance
cm³/1000 strokes : + 15.0
Check tolerance
cm³/1000S. : + 19.0

LOW IDLE

Rated speed rpm : 550
Rack travel in mm : 3.90
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spred
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.05.98
Test oil : ISO 4113

Combination No. : 0 402 746 632

Injection pump
Pump designation : PES6P120A720RS7366
EP type number : 0 412 726 933

Governor
Governer design. : RQ300/1050PA1340
Governer no. : 0 421 801 820

Cust. part No. :

Customer-spec. information

Customer : IVECO-FRANCE
Motor : 8460.41S.7031
Power KW : 254.0

TEST BENCH REQUIREMENTS

Inlet Line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 160
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Check
tolerance °NW : + 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.95

Tolerance mm : + - 0.05
 Del. quantity cm³/1000 strokes : 289.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 4.0
 Spred
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0
 Rated speed rpm : 300
 Rack travel in mm : 6.00
 Tolerance mm : + - 0.10
 Del. quantity cm³/1000 strokes : 23.0
 Tolerance cm³/1000 strokes : + - 3.0
 Check tolerance cm³/1000S. : + - 6.0
 Spred
 Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1110
 guide sleeve travel mm : 6.85
 Tolerance mm : + - 0.15
 Rated speed rpm : 300
 guide sleeve travel mm : 1.97
 Tolerance mm : + - 0.20
 Rated speed rpm : 1050
 guide sleeve travel mm : 6.50
 Tolerance mm : + - 0.10
 Rated speed rpm : 697

guide sleeve travel mm : 6.13
 Tolerance mm : + - 0.10
 Rated speed rpm : 399
 guide sleeve travel mm : 4.74
 Tolerance mm : + - 0.10
 Rated speed rpm : 480
 guide sleeve travel mm : 6.00
 Tolerance mm : + - 0.10
 Rated speed rpm : 1270
 guide sleeve travel mm : 11.50
 Tolerance mm : + - 0.50
 Rated speed rpm : 877
 guide sleeve travel mm : 6.38
 Tolerance mm : + - 0.10

GUIDE SLEEVE POSITION

control lever position degree : 109
 Rated speed rpm : 500
 Rack travel in mm : 20.00
 Tolerance mm : + - 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
 Aneroid pressure hPa : 1200
 Del. quantity cm³/1000 strokes : 289.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 4.0
 Spred
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0

RATED SPEED
 rack travel mm : 11.90
 Rated speed rpm : 1103
 Tolerance 1/min : + - 8
 Check speed 1/min : + - 13

rack travel mm : 4.00
Rated speed rpm : 1190
Tolerance 1/min : + - 15
Check
speed 1/min : + - 20

rack travel mm : 0.50
Tolerance mm : + - 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + - 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : > 8.15

Testing:

Rated speed rpm : 300
rack travel mm : 6.00
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 390
Tolerance 1/min : + - 20

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 12.95
Tolerance mm : + - 0.05

Rated speed rpm : 500
rack travel mm : 14.10
Tolerance mm : + - 0.10

Rated speed rpm : 700
rack travel mm : 13.90
Tolerance mm : + - 0.10

Rated speed rpm : 875
rack travel mm : 13.25
Tolerance mm : + - 0.15

Rated speed rpm : 500
rack travel mm : 14.40
Tolerance mm : + - 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 14.10
Tolerance mm : + - 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.30
Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 250
rack travel mm : 10.45
Tolerance mm : + - 0.20

Pressure hPa : 500
rack travel mm : 12.60
Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 200
Rated speed rpm : < 240

Check
speed 1/min : > 180
Check
speed 1/min : < 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 322.0
Tolerance
cm³/1000 strokes : + - 4.0
Check tolerance
cm³/1000S. : + - 7.0

rack travel mm : 13.90
Tolerance mm : + - 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 151.0
Tolerance
cm³/1000 strokes : + - 1.0
Check tolerance
cm³/1000S. : + - 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.30
Tolerance mm : + - 0.50
Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : + - 15.0
Check tolerance
cm³/1000S. : + - 19.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 6.00
Tolerance mm : + - 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 06.05.98
Test oil : ISO 4113

Combination No. : 0 402 746 633

Injection pump
Pump designation : PES6P120A720RS7366
EP type number : 0 412 726 933

Governor
Governor design. : RQ300/1050PA1344
Governor no. : 0 421 801 821

Cust. part No. :

Customer-spec. information

Customer : IVECO-FRANCE
Motor : 8460.41R.7143
Power KW : 214.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 160
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Check
tolerance °NW : + 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 11.55

Tolerance mm : + - 0.05
 Del. quantity cm³/1000 strokes : 234.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 4.0
 Spread
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0
 Rated speed rpm : 300
 Rack travel in mm : 6.30
 Tolerance mm : + - 0.10
 Del. quantity cm³/1000 strokes : 23.0
 Tolerance cm³/1000 strokes : + - 3.0
 Check tolerance cm³/1000S. : + - 6.0
 Spread
 Tolerance cm³/1000 strokes : 8.0
 Check tolerance cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : 109
 Rated speed rpm : 500
 Rack travel in mm : 20.00
 Tolerance mm : + - 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
 Aneroid pressure hPa : 1200

Del. quantity cm³/1000 strokes : 234.0
 Tolerance cm³/1000 strokes : + - 1.0
 Check tolerance cm³/1000S. : + - 4.0
 Spread
 Tolerance cm³/1000 strokes : 5.0
 Check tolerance cm³/1000S. : 9.0
 RATED SPEED
 rack travel mm : 10.50
 Rated speed rpm : 1103
 Tolerance 1/min : + - 8
 Check speed 1/min : + - 13
 rack travel mm : 4.00
 Rated speed rpm : 1175
 Tolerance 1/min : + - 15
 Check speed 1/min : + - 20
 rack travel mm : 0.50
 Tolerance mm : + - 0.50
 Rated speed rpm : 1350

LOW IDLE

control lever
 position degree : 71.0
 tolerance degree : + - 4.0
 Setting point w/out bumper spring
 Rated speed rpm : 200
 CRT mm min. : > 7.80
 Testing:
 Rated speed rpm : 300
 rack travel mm : 6.30
 Tolerance mm : + - 0.10
 rack travel mm : 2.00
 Rated speed rpm : 395
 Tolerance 1/min : + - 20

TORQUE CONTROL

Rated speed rpm : 1050
 rack travel mm : 11.55

Tolerance mm	: + -	0.05
Rated speed rpm	:	425
rack travel mm	:	12.75
Tolerance mm	: + -	0.10
Rated speed rpm	:	500
rack travel mm	:	12.75
Tolerance mm	: + -	0.10
Rated speed rpm	:	700
rack travel mm	:	12.50
Tolerance mm	: + -	0.15
Rated speed rpm	:	875
rack travel mm	:	11.90
Tolerance mm	: + -	0.15
Rated speed rpm	:	425
rack travel mm	:	13.30
Tolerance mm	: + -	0.40

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm	:	600
Pressure hPa	:	1200
rack travel mm	:	12.75
Tolerance mm	: + -	0.10

Rated speed rpm	:	600
Pressure hPa	:	-
rack travel mm	:	9.60
Tolerance mm	: + -	0.20

MEASUREMENT

Rated speed rpm	:	600
Pressure hPa	:	260
rack travel mm	:	10.40
Tolerance mm	: + -	0.20
Pressure hPa	:	420
rack travel mm	:	12.00
Tolerance mm	: + -	0.05

Start interlock

Rated speed rpm	: >	100
Rated speed rpm	: <	250
Check speed 1/min	: >	80

Check speed 1/min	:	< 260
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FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa	:	1200
Rated speed rpm	:	500
rack travel mm	:	12.75
Tolerance mm	: + -	0.10
Del. quantity cm ³ /1000 strokes	:	245.0
Tolerance cm ³ /1000 strokes	:	+ - 4.0
Check tolerance cm ³ /1000S.	:	+ - 7.0

Aneroid pressure hPa	:	-
Rated speed rpm	:	600
Del. quantity cm ³ /1000 strokes	:	152.0
Tolerance cm ³ /1000 strokes	:	+ - 1.0
Check tolerance cm ³ /1000S.	:	+ - 4.0

STARTING FUEL DELIVERY

Rated speed rpm	:	100
rack travel mm	:	11.60
Tolerance mm	: + -	0.30
Del. quantity cm ³ /1000 strokes	:	105.0
Tolerance cm ³ /1000 strokes	:	+ - 15.0
Check tolerance cm ³ /1000S.	:	+ - 19.0

LOW IDLE

Rated speed rpm	:	300
Rack travel in mm	:	6.30
Tolerance mm	: + -	0.10
Del. quantity cm ³ /1000 strokes	:	23.0
Tolerance cm ³ /1000 strokes	:	+ - 3.0
Check tolerance cm ³ /1000S.	:	+ - 6.0
Spread	:	

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.04.98
Test oil : ISO 4113

Combination No. : 0 402 746 994

Injection pump
Pump designation : PES6P120A320RS7344
EP type number : 0 412 726 914

Governor
Governor design. : RQV275...1000PA1161
Governor no. : 0 421 814 100

Cust. part No. : CCEP 5143A 66-231

Customer-spec. information

Customer : RENAULT V.I.
Motor : MIDR 062045 E/41
Power KW : 249.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.50
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 11.00
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : + 0.50
Check tolerance °NW : + 0.75

Start of delivery mark

°NW after s.o.d. : -0.15
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Barrel no. : 1

Beginning of delivery difference

betw. rack trav.
mm : 21.00
and maximum rack
travel : 11.00
Difference ° CS : 2.25

CRT ZERO POSITION

Rack travel in mm : 12.60
Tolerance mm : \pm 0.05

BASIC SETTING

Rated speed rpm : 600

Del. quantity cm³/1000 strokes : 285.0

Tolerance cm³/1000 strokes : \pm 1.0

Check tolerance cm³/1000S. : \pm 4.0

Spread

Tolerance cm³/1000 strokes : 5.0

Check tolerance cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : -7.70
Tolerance mm : \pm 0.10

Del. quantity cm³/1000 strokes : 28.0

Tolerance cm³/1000 strokes : \pm 2.0

Check tolerance cm³/1000S. : \pm 5.0

Spread

Tolerance cm³/1000 strokes : 8.0

Check tolerance cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1086
guide sleeve travel mm : 8.09
Tolerance mm : \pm 0.25

Rated speed rpm : 300
guide sleeve travel mm : 1.66

Tolerance mm : \pm 0.25

Rated speed rpm : 793
guide sleeve travel mm : 6.00

Tolerance mm : \pm 0.25

Rated speed rpm : 343
guide sleeve travel mm : 2.33
Tolerance mm : \pm 0.25

Rated speed rpm : 393
guide sleeve travel mm : 2.95
Tolerance mm : \pm 0.25

Rated speed rpm : 500
guide sleeve travel mm : 3.72
Tolerance mm : \pm 0.25

Rated speed rpm : 1410
guide sleeve travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever position degree : - 1
Rated speed rpm : 1235

Rack travel in mm : 11.70
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure hPa : 1000

Del. quantity cm³/1000 strokes : 285.0

Tolerance cm³/1000 strokes : \pm 1.0

Check tolerance cm³/1000S. : \pm 4.0

Spread

Tolerance cm³/1000 strokes : 5.0

Check tolerance cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 120.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : -1.00
Rated speed rpm : 1080
Tolerance 1/min : \pm 5

rack travel mm : -8.60
Rated speed rpm : 1215
Tolerance 1/min : \pm 15

rack travel mm : -12.10
Tolerance mm : \pm 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 65.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : < -5.70

Testing:

Rated speed rpm : 300
rack travel mm : -7.70
Tolerance mm : \pm 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 600
Rated speed rpm : 1000
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
Rated speed rpm : 500

Pressure hPa : -
rack travel mm : -3.40
Tolerance mm : \pm 0.30

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 320
rack travel mm : -2.65
Tolerance mm : \pm 0.15

Pressure hPa : 640
rack travel mm : -0.70
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 225

Check
speed 1/min : > 80
Check
speed 1/min : < 245

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 284.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 122.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75

Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : -7.70
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 28.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS**Note remarks**

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 04.05.98

Test oil : ISO 4113

Combination No. : 0 402 776 803

Injection pump

Pump designation : PES6P120A720LS7107
: -1

EP type number : 0 412 726 805

Governor

Governer design. : RSV350...750POA520
: -1

Governer no. : 0 421 833 262

Cust. part No. :

Customer-spec. information

Customer : MB-NFZ
Motor : OM447 A
Power KW : 180.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Overflow quantity min. l/h : 110
Tolerance l/h : + 10.0

Test nozzle holder assembly : 1 688 901 019

Opening pressure bar : 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter : 1.5

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.25

Tolerance mm : + 0.05

Check tolerance mm : + 0.10

Rack travel in mm : 10.50

Tolerance mm : + 0.50

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
: -300

Tolerance : + 0.50

Check tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.10

Check tolerance °NW : + 0.75

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 14.85
Tolerance mm : + - 0.05

Del. quantity
cm³/1000 strokes : 225.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.60
Tolerance mm : + - 0.10

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : + - 3.0

Check tolerance
cm³/1000S. : + - 6.0

Spred

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + - 0.20

governor spring
pre-tension
click setting x : 1.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 225.0

Tolerance
cm³/1000 strokes : + - 1.0

Check tolerance
cm³/1000S. : + - 4.0

Spred

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 77.0
tolerance degree : + - 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 13.80

Rated speed rpm : 785
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 850

Rated speed rpm : 751
rack travel mm : 13.80

Rated speed rpm : 786
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 850

Rated speed rpm : 752
rack travel mm : 13.80

Rated speed rpm : 787
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 850

Rated speed rpm : 753
rack travel mm : 13.80

Rated speed rpm : 788
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 850

Rated speed rpm : 754
rack travel mm : 13.80

Rated speed rpm : 789
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 850

Rated speed rpm : 755
rack travel mm : 13.80

Rated speed rpm : 790
Tolerance 1/min : + - 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + - 0.55
Rated speed rpm : 850

LOW IDLE

control lever
position degree : 62.0
tolerance degree : + - 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.60
Tolerance mm : + - 0.10

rack travel mm : 2.00
Rated speed rpm : 380
Tolerance 1/min : + - 30

SET IDLE AUXILIARY SPRING

Rated speed rpm : 100
rack travel mm : 2.00

TORQUE CONTROL
Rated speed rpm : 700
rack travel mm : 14.85
Tolerance mm : + - 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 240.0
Tolerance
cm3/1000 strokes : + - 10.0
Check tolerance
cm3/1000S. : + - 14.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.60
Tolerance mm : + - 0.10
Del. quantity
cm3/1000 strokes : 17.0
Tolerance
cm3/1000 strokes : + - 3.0
Check tolerance
cm3/1000S. : + - 6.0
Spread
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.05.98
Test oil : ISO 4113

Combination No. : 0 402 076 790

Injection pump
Pump designation : PES6P120A720RS3352
EP type number : 0 412 026 780

Governor
Governor design. : RSV400...1100P2A599
: -5
Governor no. : 0 421 833 525

Cust. part No. : RE66242

Customer-spec. information

Customer : DEERE
Motor : 6081TF001
Power KW : 149.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 2.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Prestroke mm : 3.60
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

°NW after s.o.d. : 6.50
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Barrel no. : 1

Beginning of delivery difference

and maximum rack
travel : 14.00
Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.55
 Tolerance mm : + 0.05
 Del. quantity cm³/1000 strokes : 133.0
 Tolerance cm³/1000 strokes : + 1.0
 Check tolerance cm³/1000S. : + 3.0
 Spread
 Tolerance cm³/1000 strokes : 4.0
 Check tolerance cm³/1000S. : 6.5

Rated speed rpm : 400
 Rack travel in mm : 5.70
 Tolerance mm : + 0.10
 Del. quantity cm³/1000 strokes : 26.0
 Tolerance cm³/1000 strokes : + 2.0
 Check tolerance cm³/1000S. : + 4.5
 Spread
 Tolerance cm³/1000 strokes : 6.0
 Check tolerance cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree : - 3
 Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : + 0.20
 governor spring pre-tension click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
 Aneroid pressure hPa : 900
 Del. quantity cm³/1000 strokes : 133.0
 Tolerance cm³/1000 strokes : + 1.0
 Check tolerance cm³/1000S. : + 3.0
 Spread
 Tolerance cm³/1000 strokes : 4.0
 Check tolerance cm³/1000S. : 6.5

CONTROL LEVER

control lever position degree : 97.0
 tolerance degree : + 4.0
 RATED SPEED
 rack travel mm : 10.50
 Rated speed rpm : 1160
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 1215
 Tolerance 1/min : + 5
 rack travel mm : 0.85
 Tolerance mm : + 0.55
 Rated speed rpm : 1350
 rack travel mm : 4.00
 Rated speed rpm : 1225
 Tolerance 1/min : + 15

LOW IDLE

control lever position degree : 74.0
 tolerance degree : + 4.0
 Setting point w/out bumper spring
 Rated speed rpm : 400
 rack travel mm : 5.20
 Tolerance mm : + 0.10

Rated speed rpm : 100
CRT mm min. : > 19.00

Testing:

Rated speed rpm : 400
rack travel mm : 5.70
Tolerance mm : + - 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.55
Tolerance mm : + - 0.05

Rated speed rpm : 700
rack travel mm : 11.90
Tolerance mm : + - 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.20
Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 550
rack travel mm : 11.00
Tolerance mm : + - 0.20

Pressure hPa : 210
rack travel mm : 9.80
Tolerance mm : + - 0.05

Start interlock

Rated speed rpm : > 100
Check speed 1/min : > 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 900
Rated speed rpm : 700
Del. quantity cm3/1000 strokes : 148.5
Tolerance cm3/1000 strokes : + - 2.0
Check tolerance cm3/1000S. : + - 4.0

Aneroid pressure hPa : -
Rated speed rpm : 500
Del. quantity cm3/1000 strokes : 78.0
Tolerance cm3/1000 strokes : + - 2.0
Check tolerance cm3/1000S. : + - 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : + - 0.50
Del. quantity cm3/1000 strokes : 105.0
Tolerance cm3/1000 strokes : + - 20.0
Check tolerance cm3/1000S. : + - 25.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 5.70
Tolerance mm : + - 0.10
Del. quantity cm3/1000 strokes : 26.0
Tolerance cm3/1000 strokes : + - 2.0
Check tolerance cm3/1000S. : + - 4.5
Spread
Tolerance cm3/1000 strokes : 6.0
Check tolerance cm3/1000S. : 8.0

End of test specification sheet

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BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.05.98
Test oil : ISO 4113

Combination No. : 0 402 746 611

Injection pump
Pump designation : PES6P120A320RS7372
EP type number : 0 412 726 940

Governor
Governor design. : RQV250...1400PA1279K
Governor no. : 0 421 815 508

Cust. part No. : 3866783

Customer-spec. information

Customer : CDC
Motor : 6BTA
Power KW : 235.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Prestroke mm : 4.00
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

°NW after s.o.d. : 11.00
Tolerance : + 0.50
Check tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 13.45
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 186.5

Tolerance cm³/1000 strokes : + 1.0

Check tolerance cm³/1000S. : + 4.0

Spread

Tolerance cm³/1000 strokes : 8.0

Check tolerance cm³/1000S. : 12.0

Rated speed rpm : 300

Rack travel in mm : 7.00

Tolerance mm : + 0.20

Del. quantity cm³/1000 strokes : 28.0

Tolerance cm³/1000 strokes : + 3.0

Check tolerance cm³/1000S. : + 5.0

Spread

Tolerance cm³/1000 strokes : 5.0

Check tolerance cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1455

guide sleeve

travel mm : 9.16

Tolerance mm : + 0.15

Rated speed rpm : 275

guide sleeve

travel mm : 1.39

Tolerance mm : + 0.20

Rated speed rpm : 931

guide sleeve

travel mm : 5.67

Tolerance mm : + 0.25

Rated speed rpm : 480

guide sleeve

travel mm : 3.18

Tolerance mm : + 0.25

Rated speed rpm : 1860
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400

Aneroid pressure

hPa : 1200

Del. quantity

cm³/1000 strokes : 186.5

Tolerance

cm³/1000 strokes : + 1.0

Check tolerance

cm³/1000S. : + 4.0

Spread

Tolerance

cm³/1000 strokes : 8.0

Check tolerance

cm³/1000S. : 12.0

CONTROL LEVER

control lever

position degree : 121.5

tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.80

Rated speed rpm : 1465

Tolerance 1/min : + 5

rack travel mm : 6.80

Rated speed rpm : 1580

Tolerance 1/min : + 15

rack travel mm : 0.50

Tolerance mm : + 0.50

Rated speed rpm : 1725

LOW IDLE

control lever

position degree : 77.0

tolerance degree : + 4.0

Control lever difference

Grad : 48.5

tolerance degree : + 6.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : > 8.60

Testing:

Rated speed rpm : 300
rack travel mm : 7.00
Tolerance mm : + - 0.20

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 13.45
Tolerance mm : + - 0.05

Rated speed rpm : 1000
rack travel mm : 13.20
Tolerance mm : + - 0.10

Rated speed rpm : 700
rack travel mm : 13.00
Tolerance mm : + - 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1400
Pressure hPa : 1200

Rated speed rpm : 1000
Pressure hPa : -
rack travel mm : 9.65
Tolerance mm : + - 0.20

MEASUREMENT

Rated speed rpm : 1400

Pressure hPa : 620
rack travel mm : 12.30
Tolerance mm : + - 0.20

Pressure hPa : 280
rack travel mm : 10.65
Tolerance mm : + - 0.20

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 240

Check speed 1/min : > 80
Check speed 1/min : < 250

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1200
Rated speed rpm : 1000
Del. quantity cm³/1000 strokes : 178.0
Tolerance cm³/1000 strokes : + - 3.0
Check tolerance cm³/1000S. : + - 6.0
Spread
Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000S. : 12.0

rack travel mm : 13.00
Tolerance mm : + - 0.20

Aneroid pressure hPa : -
Rated speed rpm : 1000
Del. quantity cm³/1000 strokes : 98.5
Tolerance cm³/1000 strokes : + - 1.0
Check tolerance cm³/1000S. : + - 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : + - 0.50
Del. quantity cm³/1000 strokes : 170.5
Tolerance cm³/1000 strokes : + - 20.0
Check tolerance cm³/1000S. : + - 25.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 7.00
Tolerance mm : + - 0.20
Del. quantity
cm³/1000 strokes : 28.0
Tolerance
cm³/1000 strokes : + - 3.0
Check tolerance
cm³/1000S. : + - 5.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet